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Illinois Meeting On Air Cooling To Be 'Practical'

Engineers From Factory & Field Will Speak on Up-to-Date Methods

URBANA, Ill.—Problems which the small dealer must meet and solve in his every-day work in air conditioning will be discussed in non-technical fashion at the two-day conference on air conditioning at the University of Illinois here March 8 and 9.

Most of the speakers at the conference will be men who have had field experience in coping with the problems they discuss, making the meeting of practical value to dealers and salesmen in working out their cooling and heating problems.

The university's department of mechanical engineering and engineering experiment station is sponsoring the conference. Prof. W. H. Severns is chairman of the general committee.

"Equipment for All-Year Air Conditioning" will be discussed by Prof. Severns and P. E. Mohn, of the department of mechanical engineering, and "Characteristics of Duct Systems and Fans" will be dealt with by S. H. Downs, chief engineer

(Concluded on Page 3, Column 1)

Frick Introduces Line Of Unit Conditioners

WAYNESBORO, Pa.—A new line of unit air conditioners in 3 and 5-ton capacities, suitable for installation in restaurants, tap rooms, stores, offices, chapels, and industrial plants, has been announced by Frick Co.

Cabinets of the units are sound-insulated, and all moving parts are mounted on rubber for quiet operation. Outside measurement of the small unit is 40¾ inches wide by 23⅜ inches deep by 83 inches high. The larger cabinet measures 42 by 26 by 83 inches.

Featured in the units is a heavy-duty slow-speed refrigerating system, and a water-cooled motor and special condenser, with the cold water on the outside, to carry away heat. The unit is built with a heavy structural steel frame, and is said to offer the advantages of a central air-conditioning plant, when ducts are added.

Installation of the units, it is claimed, can be accomplished in a few hours, usually without interference with the customer's regular business. In addition to handling cooling and dehumidification, the units can be made "year-around" by the addition of heating coils for winter use.

State Legislatures Framing Measures That May Affect Refrigerator Dealers

Measures affecting the refrigeration and air-conditioning industry, and household appliance merchandising, have found their way into the legislative hoppers of many states, according to a survey of measures introduced as lawmaking bodies of the various states settled into sessions which may last well into the summer.

The rapidly growing locker storage field is given attention in some of the proposed legislation, while other bills deal with such old problems as utility merchandising. Some measures call for the revision or strengthening of the fair trade acts which are now in effect in most of the states.

Following is a state-by-state summary:

ALABAMA—Proposals before the legislature include an unfair sales act, prohibiting sale of a commodity or a product at wholesale at less than 2% above cost and at retail at less than 6% above cost.

ARKANSAS—After amending the measure to provide that the tax shall be based on the total number of stores owned by a single firm, whether located within or outside the state, the House Revenue and Taxation Committee has approved a chain store license bill.

A senate bill would authorize municipalities to regulate soliciting by local ordinance.

CALIFORNIA—Appliance dealers are joining with other business groups in opposition to the administration's announced intention of encouraging the organization of co-operatives. Lieutenant Governor Ellis E. Patterson, in his inaugural address, suggested "that we begin in California to see that those who have seasonable occupations are provided with some kind of employment dur-

(Concluded on Page 28, Column 1)

Dealer Cooperation Is Big Load Builder, Utility Finds

PORTLAND, Ore. — Cooperation with independent appliance dealers rather than competition with them has paid real dividends in the form of increased power consumption to Northwestern Electric Co., one of the utilities serving this area, according to James B. Buman, manager of the company's residential and rural sales.

Aided by the utility's cooperative efforts, dealers in its territory sold

(Concluded on Page 3, Column 1)

'Don't Fear Competition'

"Competition isn't something to fear," says Frank W. Greusel, president of the Greusel Distributing Co. of Madison, Wis. There are various types of appliance dealers, he points out on pages 24 and 25 of this issue, and each has his own peculiar problems—problems which Mr. Greusel analyzes.

He presents figures to show the high cost of price cutting, notes the advantages and disadvantages which department stores, specialty dealers, hardware stores, furniture stores, and chain stores have in the competitive game, and demonstrates that there is a place in the picture for each type, with none having overweening advantages.

Finally he analyzes dealership expenses, item by item, and indicates sound business practices with reference to each. Every appliance dealer should find something of value in this article. Other information of special importance to appliance dealers will be found on pages 2, 6, 15 and 26.

Apex Shows 2-Model Refrigerator Line

CLEVELAND—Reports that Apex Electrical Mfg. Co. would discontinue the manufacture of refrigerators this year were set at rest Feb. 18 when the company introduced a two-model line at a conference of divisional managers at factory headquarters here.

Complete description and specifications of the line were not available, but it was announced that the two units, in 5.25 and 6.25-cu. ft. size, would be merchandised in the competitive price brackets. Production delivery on the line was promised for about March 1.

Present at the conference at which the models were introduced were J. M. Michael, eastern division manager; Al C. Scott, central division; J. C. Thomas, southern division; and D. M. Thomas, midwestern division.

York 'Packaged' Units Feature New Styling

YORK, Pa.—Units producing from 2¾ to 15 tons of cooling effect are included in the line of "packaged" commercial air-conditioning equipment being offered by York Ice Machinery Corp. for the 1939 market.

Special attention this year has been paid to styling and ease of installation and handling, according to S. E. Lauer, vice president in charge of sales. Models in the York line have been designed to take up a minimum of floor space, and are styled for pleasing appearance, he says.

The Yorkaire 1000, for instance, which produces 10 tons of refrigeration, requires less than 30 square feet of floor space, and stands about 6 feet high. Like all units in the line,

(Concluded on Page 2, Column 4)

December Sales of Electric Ranges Showed Gain

NEW YORK CITY—Sales of electric ranges to distributors and dealers in the United States during December of last year totaled 13,355 units, a gain of 5.6% over the 12,649 units sold in December, 1937, according to reports of 16 member-manufacturers of National Electrical Manufacturers Association.

Sales for the year, however, were down 31.6% from their 1937 marks, totaling 245,236 units as against 359,772 in the previous year.

December electric range sales are considered significant of improved business conditions, since they show a continuation of the gain over 1937 marks which was begun in November, when shipments went an even 3% over those for the same month of the previous year.

November had been the year's most encouraging month, for October shipments were down 20.7% from comparable 1937 totals, reports revealed.

Michigan continued as the best electric range sales state during December, according to the report, accounting for 13% of the total sales for the month.

Stoker Sales Continue Gain In December

WASHINGTON, D. C. — Factory sales of mechanical stokers during December of last year continued their gains over the comparable 1937 figures, according to reports of manufacturers to the Bureau of the Census. December sales in all classes amounted to 4,971 units, as compared with 4,609 in the same month of 1937.

Helped by last-quarter gains, sales for the year amounted to 96,433 units, only slightly under the 101,808 units sold in all of 1937, and well above the mark of 86,080 units set in 1936.

Factory shipments of stokers for residential use totaled 3,947 units in December, as against 3,670 in December of 1937 and 6,643 in November of last year. Of this amount, 3,376 were of bituminous type and 571 of anthracite type. This

(Concluded on Page 26, Column 3)

Plans Available For Range and Roaster Drives

Manual on Water Heaters Helps Salesman Tell Appliance Story

NEW YORK CITY—While electric range prospects are being advised to "Guess Again" on the low cost of electric cookery, dealers who sell electric roasters will be urging their prospects to "See for Yourself" that use of this "hottest" appliance shows the way to "Easier Cooking—Easier Living."

These national advertising and promotional themes on the big brother and little brother of electric cookery appliances are carried out all through the cooperative drives planned for them by Modern Kitchen Bureau this year. Complete plan books covering the campaigns have just been put in the mail.

And to show the electric water heater salesman that he's not being neglected, the bureau also has issued a visual presentation manual, which uses the theme, "every home with electric light should have an electric water heater," to tell the story of this up-and-coming appliance in swift, readable style.

March will be "preparation time" for electric range dealers. First national advertising, which breaks in the March issues of women's magazines, tells housewives they've been guessing too high on electric

(Concluded on Page 2, Column 1)

Edelmuth Joins Range Firm As Sales Manager

CLEVELAND — David L. Edelmuth, major appliance manager for the Associated Merchandising Corp., New York City, has been elected vice president and general sales manager of the Cleveland Cooperative Stove Co., James Mitchell, president of the company, announces.

Mr. Edelmuth, who will assume his new duties on March 1, had been appliance manager of Associated Merchandising Corp. since 1935,

(Concluded on Page 2, Column 3)

100% Feminine Home Planning Department Brings Sales of 720 Ranges, 544 Refrigerators In Year

CHATTANOOGA, Tenn.—Believing that it takes a woman to please a woman, Tennessee Electric Power Co. operates a 100% feminine home planning service. And last year Miss Juanita Walters, director of this service, and her 15 assistants demonstrated the practicality of this theory by furnishing kitchen plans for 960 of the 1,975 new homes built in the utility's territory, and for the remodeling of some 694 homes.

And not only were plans drawn up, but appliances were sold. Sales to new homes for which plans had been prepared totaled 334 refrigerators, 438 ranges, and 256 water heaters; 211 refrigerators, 282 ranges, and 183 water heaters were sold to homes for which remodeling plans had been drawn.

Thus, total major appliance sales resulting from the work of the home planning service during the year were 544 refrigerators, 720 ranges, and 439 water heaters, or a grand total of 1,703 units.

Not stopping with the promotion of appliances alone, home service workers also made recommendations for such things as adequate wiring and proper lighting facilities.

Speculative builders have shown particular interest in the service. Several of them have found it advantageous to have their homes planned completely by the utility's home service department and exhibited to the public as "All-Electric" homes. In such cases, the home planning advisors have not only designed the electrical features of the homes, but also have been called upon to supervise such details as the selection of plumbing fixtures and the planting of shrubbery.

Weekly Dinner Meetings For Builders Boost Electric Range Sales Ratio In Cleveland

CLEVELAND — That the Home Bureau set up by the Electrical League of Cleveland two years ago has really "sold" builders and architects on the value of electric ranges is shown by the fact that ratio of electric ranges installed in new homes to the number of homes built has improved during that period from 1 to 90 to 1 to 6.

One bureau activity of particular value is the interest it arouses in the building field by means of its Tuesday night range demonstrations. To this weekly affair are invited builders and architects and their wives. They watch three types of meals being cooked on an electric range, hear an informal talk on electric cookery, and then eat the cooked food.

By limiting attendance at the dinners to seven or eight couples, friendliness of the gatherings has been enhanced.

Dinners serve a three-fold purpose: (1) to sell the builders and architects on the merits of electric ranges, (2) to enlist the interest of the wives in getting their husbands to buy electric ranges for their own use, (3) to convince the men that they should install electric ranges in their building projects.

From those in attendance at 23 meetings held during 1938, 43 builders subsequently bought electric ranges for their own use. In addition, they have installed 203 electric ranges in buildings which they constructed.

They Plan a Real 'Clean-Up' Drive

Happy about the whole thing are these men who are shown as they initiated an activity which may be of considerable importance to appliance dealers. They organized an electric dishwasher sink section of the National Electrical Manufacturers Association, joined the Modern Kitchen Bureau program, and then set aside an initial appropriation for the development of a sales plan for the electric dishwasher sink. From left to right: R. M. Beatty, Westinghouse; Bruce Fleming, Nema; W. T. Theleen, General Electric, and chairman of the new section; M. H. Beekman, Hotpoint; and S. S. Fisher, Westinghouse.

All Kinds of Sales Helps & Cash Awards Will Stimulate Range & Roaster Sales

(Concluded from Page 1, Column 5)

range operating costs. Window banners repeat the theme, as do blow-ups of the advertisements, counter cards, and letterhead stickers.

A special four-page newspaper supplement also is available for dealer use in local campaigns, with copy divided 50-50 between electric cooking and electric ranges, and space for advertisements. Copies of all advertisements are available in mat form.

RANGE DEALER HELPS

Billboard posters telling the electric range story also have been designed, and a series of radio spot announcements and five-minute scripts for cooking schools have been prepared. A selling guide booklet for range salesmen, giving the "how" of selling the appliance, is another bureau service available to dealers.

With the electric roaster program opening a three-year sales push, tools to be used in digging this appliance into public favor include a series of advertisements in national women's magazines and Saturday Evening Post, spotted from March on through the rest of the year.

Playing up the "easier cooking—easier living" theme, the advertisements urge housewives to "see for yourself" what the new electric roasters will do. June will be "see for yourself" month, with the advertising barrage heaviest during that period.

Window banners, jumbo advertisements, local newspaper mats, counter cards will all be used to drum home the roaster message, and urge prospects to inspect new models in their dealers' showrooms. Special two-page newspaper supplement also has been prepared for use just before or simultaneously with strong roaster promotions.

MANUAL ON ROASTERS

Selling instruction booklet has been prepared for retail salesmen and sales girls, as a primer on roaster features to use in getting "floor sales." Technically correct, the manual lists the step-by-step method to use in opening and closing a sale.

A series of five-minute domestic science talks, and radio spot announcements of 20, 50, and 100-word lengths round out the selling helps.

All are designed to give the dealer maximum coverage, and tie-in with the "see for yourself" idea, to bring prospects into the dealers' stores.

The new electric water heater visual manual, really a sales presentation, is of 8½ x 11 size to fit into the salesman's brief case, and is printed in royal blue and white, suggestive of oceans of sparkling water.

Starting out squarely with the premise, "every home with electric light should have an electric water heater," the book presents eight lively parallels between the two, in that both are dependable, clean, safe, modern, cool, healthful, efficient, and economical.

Full-page photographs of electric water heaters, with insert photos on electric light, are used to telegraph the series of sales points to prospects. Thumbnail sketches scattered throughout the book drive home more sales ideas.

In addition to being used as a presentation manual, the book also may be left with prospects or mailed to them in advance of a call.

BOOKLET ON HEATERS

Another and smaller booklet has been prepared to give water heater salesmen a "quickie" of the appliance's sales points, and to help them get across their sales story. In this booklet the electric water heater, personified, invites readers to "check up" on his winning characteristics. Appealing to prospects as well as salesmen, the booklet may be used as give-aways or direct-mail pieces.

Water heater contests, as announced previously, include a series of awards for the best letters on "How I Sell Electric Water Heaters," with quarterly and annual prizes, the grand prize of $100 going to the writer of the year's best letter.

CASH PRIZES!

Utilities and dealers have chances to win cash awards (and prestige) in four contests. The first, for the national utility award, offers a prize of $1,000 cash and a silver trophy for the best all-around water heater job performed during the year.

The engineers' and executives' contest, for technical papers on "The Advisability of the Competitive Water Heater Rate and the Advantages of the Electric Water Heater Load," offers two prizes of $300 and $200.

The window display contest, for utilities and dealers, offers prizes aggregating $250, and the advertising contest, for the best campaign of at least four newspaper advertisements on electric water heaters by dealers or utilities, will pay $400 to winning contestants.

In addition to sales helps for salesmen and contests for practically everybody, the MKB program also includes a complete promotional series for dealer and utility use.

Edelmuth Leaves AMC For Range Sales

(Concluded from Page 1, Column 5)

coming to that position from Bloomingdale's department store in New York City, where he had been for about eight years.

While there had been some activity at AMC headquarters previously toward establishing a private brand line of appliances for that group of 20 key department stores, it was not until Mr. Edelmuth stepped in and took over that intensive efforts in that direction were begun.

Under his direction, a complete line of highly competitive major appliances was developed for the cooperating stores under the AMC label, together with a complete merchandising program covering all phases of promotion and sales.

York Conditioners Aim At Quick Installation

(Concluded from Page 1, Column 3)

it can be taken through an ordinary doorway.

The Yorkaire 475, producing five tons of refrigeration, occupies less than 6 square feet of floor space, and stands about 7 feet high. Smaller units of the line are so designed as to be able to fit into almost any interior setting.

These smaller units are set up for practically "over-night" installation, with larger models requiring slightly more time. Only electrical, water, and drain connections need be made, eliminating two problems that have hitherto annoyed merchants: interference with the normal flow of business, and taking their cooling equipment with them when they move.

Refrigerator Sales-By-States Made By Nema Group To Dealers In 1938

States and Territories	Household Low Sides: Quantity December	Quantity Year 1938	% of Total Year 1938
Alabama	254	10,495	.9
Arizona	56*	2,699	.2
Arkansas	42	6,464	.5
California	3,575	90,115	7.6
Colorado	386	8,813	.7
Connecticut	732	16,740	1.4
Delaware	16	2,387	.2
District of Columbia	643	14,981	1.3
Florida	1,578	17,807	1.5
Georgia	273	14,220	1.2
Idaho	116	4,166	.3
Illinois	5,083	103,093	8.7
Indiana	827	27,613	2.3
Iowa	305	21,114	1.8
Kansas	211	12,806	1.1
Kentucky	209	13,961	1.2
Louisiana	510	16,001	1.3
Maine	130	5,212	.4
Maryland	566	15,591	1.3
Massachusetts	1,535	47,227	4.0
Michigan	3,134	52,400	4.4
Minnesota	1,720	31,343	2.6
Mississippi	111	5,850	.5
Missouri	940	34,044	2.9
Montana	27	3,145	.3
Nebraska	91	8,817	.7
Nevada	13	1,272	.1
New Hampshire	139	3,423	.3
New Jersey	1,902	46,654	3.9
New Mexico	37	2,188	.2
New York	8,293	166,906	14.0
North Carolina	578	20,882	1.8
North Dakota	123	2,771	.2
Ohio	2,323	62,718	5.3
Oklahoma	88	12,854	1.1
Oregon	194	9,391	.8
Pennsylvania	3,732	105,960	8.9
Rhode Island	160	4,582	.4
South Carolina	170	8,654	.7
South Dakota	126	2,908	.2
Tennessee	61	16,614	1.4
Texas	833	54,092	4.5
Utah	27*	6,369	.5
Vermont	56	2,827	.2
Virginia	810	17,430	1.5
Washington	368	18,632	1.6
West Virginia	429	10,789	.9
Wisconsin	985	25,058	2.1
Wyoming	64	1,549	.1
Total United States	44,410	1,191,627	100.0
Canada	1,747	43,155	
Other Foreign (Incl. U. S. Possessions)	8,206	124,174	
Total For World	54,363	1,358,956	

*Includes sales and credits.

THE COLD CANVASS

By B. T. Umor

His Secret of Selling To Women

Popular Revival of the Month is the story of the salesman who made such an unusual record that his manager decided to learn his secret. His specialty was selling to women. They found him irresistible. It wasn't sex appeal, for he was a little old man as ugly as sin. What was it?

"I'll tell you how it is boss," he said, "I just compliment them. It makes 'em like me."

"You tell them they look pretty?"

"Not exactly."

"You tell them they're smart."

"That's not quite it."

"Well, what do you tell them?" exploded the exasperated boss.

"Why, when I go to the door, no matter how old the woman is, I politely inquire: 'Madam, is your mother in?' That seems to get them every time."

* * *

The Drinkard

The growing popularity of milk bars may bring about a child's version of "Ten Nights in a Barroom." Picture, if you can, poor Pop creeping to the swinging doors of a cowatorium and asking, "Is my daughter in there?"

And to the chant of "Daughter, dear daughter, come home with me now," the imbibing tot saying, "Wait a second, set up another one of those cream parfaits before I check out, Butch."

* * *

Travelaugh

It's fun to be fooled. After Charles Laughton's Beachcomber, a film story of the South Seas, was released in Europe, steamship companies noticed a sharp increase in passages to tropical islands.

But the picture was made on the coast of France, with fake palm trees and other phony effects.

* * *

Insulated Ladies

Ever wonder why the girl friend kept comfy in freezing weather with little more on than a well-dressed fan dancer, while your teeth made noises like a skeleton tap dancing on a tin roof, even though you were bundled up to the ears?

Here's your answer. A report at the recent A.S.H.V.E. convention explained it by disclosing that the thickness of the "thermal insulating tissues"—or cold weather protection—of women is nearly double that of men. And that ain't all. In hot weather the females don't perspire nearly as quickly as men, due to their "insulation."

* * *

What Every Salesmanager Knows

One company official might not have been so far off the truth when he told an eastern sales convention recently that, if lightning struck 'most any movie theater some afternoon about 4 o'clock, 90% of the casualties would be salesmen.

Utility That Dropped Appliance Selling Is Gratified By Results

(Concluded from Page 1, Column 2)

$1,652,234 worth of electrical appliances to its residential and farm customers during the first nine months of this year. Considering the general trend of business conditions, this figure compares favorably with the dollar volume of $1,700,752 chalked up for the same period last year.

Mr. Buman stated that sales for the first three quarters of the year represented $139,772 in estimated annual revenue, or 93.1% of the quota set for that period.

January-September unit sales of major appliances were as follows: 2,952 refrigerators, 1,202 ranges, 662 oil burners, 324 water heaters, 5,502 radios, 1,013 vacuum cleaners, and 2,230 washers.

Discussing the origin and development of Northwestern Electric's dealer-cooperative program, Mr. Buman explained that in 1931 the company determined to discontinue sales of electrical appliances and to expend its promotional efforts in an attempt to boost the sales of the dealers in its territory.

This plan of promotion, the utility officials decided, would more thoroughly utilize the facilities of all the dealers, and move the appliances at a more economical cost to both parties.

The utility's stock of appliances was gradually liquidated and its sales force reduced until by 1933 practically no appliances remained and the personnel of the residential and farm sales department had been cut from 72 to 19 people. As a result, practically all dealers had expanded their general sales programs and had put sales organizations in the field.

"Since the plan was inaugurated, the number of dealers in the territory has increased materially," declared Mr. Buman. "For instance, where we had less than 45 electric range dealers under the old plan, we now have 77.

"Load building through a dealer cooperative program requires little change from orthodox merchandising procedure," Mr. Buman pointed out. "Under the utility-dealer plan campaigns are handled about in the same manner, except that the customer is directed to buy from a dealer. Dealer salesmen follow all prospects in the field.

"The utility runs about five major and five minor promotional programs during the year. Quotas are set up in each class of appliances and every dealer has a quota based on the dollar volume done the previous year. By degrees, we have been able to educate the dealers to work on an appliance unit quota plan which will materially increase their dollar volume over the period of a year.

"Previous conflicts and dissatisfaction among dealers because of sales competition with them has changed to a situation of wholehearted cooperation with our sales promotion plans," Mr. Buman reported, "and at the same time the dealers have, to a large extent, become 'ambassadors of goodwill' between the utility and the customers."

U. of Illinois Meeting To Deal With Dealer's Air Cooling Problems

(Concluded from Page 1, Column 1)

of Clarage Fan Co., Kalamazoo, Mich.

At the afternoon session, which Mr. Downs will chairman, discussions include "Introduction and Diffusion of Conditioned Air in Rooms," by D. W. Nelson, professor of steam and gas engineering at the University of Wisconsin, and "Regulation of Air Temperature and Humidity," by C. L. Ringquist of the Trane Co., La Crosse, Wis.

Dr. A. C. Willard, president of the university, will chairman an informal dinner session of the conference that night, at which Dr. Charles Sheard, director of the division of physics and biophysical research of Mayo Clinic, Rochester, Minn., will speak on "Physiological Responses of the Body to Its Environment."

At the morning session on March 9, R. E. Gould, assistant manager of air-conditioning engineering for Frigidaire, will discuss "The Cooling Load and Refrigerating Problems in Comfort Air Conditioning," S. Konzo of the University of Illinois will outline "Building Insulation, Types, and Applications," and L. V. Teesdale of the Department of Agriculture Forest Service, Madison, Wis., will talk on "Condensation Problems in Modern Buildings."

Afternoon session will be taken up with discussions of "Air Conditioning Water Supply and Disposal," by W. D. Gerber, engineer of Illinois State Water Survey, and "Conservation of Water by Using Cooling Towers and Evaporative Condensers," by S. I. Rottmayer, mechanical engineer with S. R. Lewis, Chicago.

In addition to hotels in both Urbana and Champaign, rooms in private homes near the campus may be arranged for at the Student Center in the Union building, or at the University Y.M.C.A. Restaurants are available near the campus. All requests for reservations should be addressed to Prof. W. H. Severns, 103 Mechanical Engineering Laboratory, Urbana.

CROSLEY is

6 Reasons for profit

1 Shelvadors provide larger sizes in all competitive price levels.

2 Shelvadors provide lower prices for equal competitive sizes.

3 Shelvadors provide 12 price steps of from $10 to $20 a step.

4 Shelvadors match or better *all* 1939 electrical refrigerator refinements, improvements, features and design advances.

5 Shelvadors match or better *all* material specifications and craftsmanship in fabrication.

6 Shelvadors match or better *all* operating costs, load ratios and freezing performances.

PLUS that uncontroversial, unmatchable, exclusive, top appeal to all women — the SHELVADOR!

"SPECIAL" LINE OF 4 QUALITY MODELS ON PRICE BASIS ONLY POSSIBLE IN NEW MILLION DOLLAR EFFICIENCY PLANT

6 cubic foot Shelvador

Built to an acknowledged high standard of construction and performance, Hermetically sealed "Electro-Saver" unit—welded, bonderized all steel cabinet finished in durable DuPont Dulux.

$132.50*

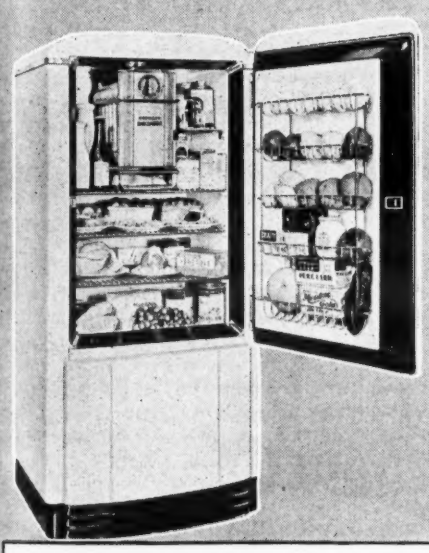
the line for '39

...12 ways to make it

"REGULAR" LINE

4

COMPLETE REFRIGERATORS MATCHING IN PRICE THE "STRIPPED" LINES OF COMPETITION



LB5-45
4½ CUBIC FEET
$127.50*

LB5-55
5½ CUBIC FEET
$147.50*

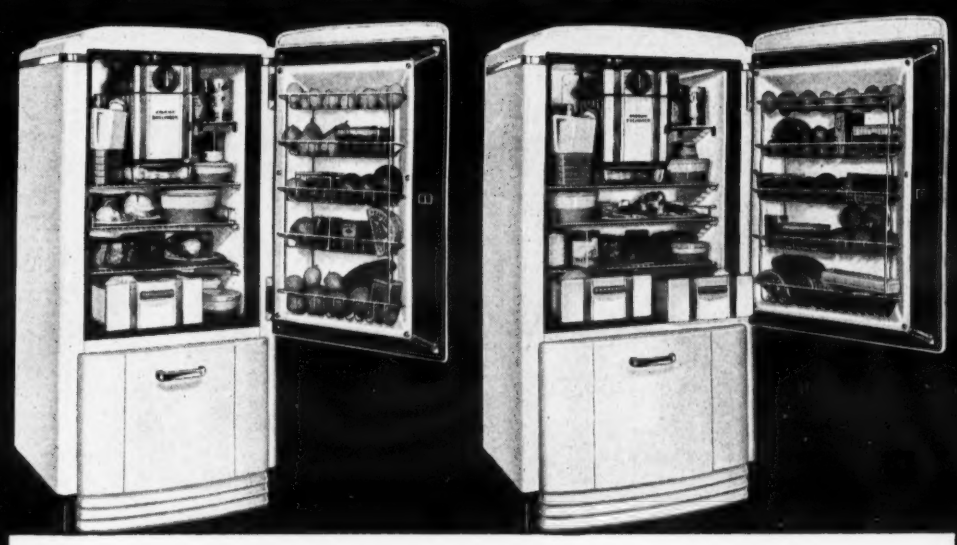
LB5-65
6½ CUBIC FEET
$167.50*

LB5-80
8 CUBIC FEET
$194.50*

"DELUXE" LINE

EQUIPPED WITH LUXURY FEATURES THROUGHOUT INCLUDING OVEN-PROOF POTTERY AT

WORLD'S LOWEST PRICES



LL5-45
4½ CUBIC FEET

LL5-55
5½ CUBIC FEET

LL5-65
6½ CUBIC FEET

LL5-80
8 CUBIC FEET

*DELIVERED AND INSTALLED . . . 5-YEAR PROTECTION PLAN $5.00 ADDITIONAL . . . PRICES SLIGHTLY HIGHER IN SOUTH AND WEST

THE CROSLEY CORPORATION POWEL CROSLEY, Jr., *Pres.*, **CINCINNATI**

Profitable Sales Ideas

Washer Salesmen Carry Soap Flakes as 'Bait' For Demonstration or To Trade For Names

PONCA CITY, Okla.—Using package soap flakes and washing powder as "door openers" and prospect "bait," instead of using them for demonstrator washings, is the methods used by Suggs-Maytag Co. here to promote electric washer sales.

Small packages of "makings" for the weekly wash stint are carried in the hands of the salesmen. This burden of soap often acts as a successful wedge and opens many doors, says Edwin Suggs, firm member. But the idea is far more subtle than the offering of the washing powder and taking a chance at the woman's interest in a washer.

These men are trained to talk about appliances, ignoring the package of flake or powdered soap, of which the homemaker standing in the door is acutely conscious.

If the woman expresses an interest in a washer for herself, she receives a sales talk and an invitation to come to the store for a demonstration. When she comes to the store, she is given a large package of the washing soap.

Why the small package? "Well, if there is no sale in sight, the salesman offers to "swap" this small package for the name of a good washer prospect. This trade for information is not suggested, however, before another sales appeal plan is brought into play.

On a map at the store, pins indicate company sales of washers in the city; this permits the canvassing representative to say, as he stands with his double-action complimentary package, "Recent purchasers of Maytags in your neighborhood are Mrs. So and So, on Such and Such Ave." This localizing of the picture, together with the elusiveness of a package of soap which is **not** thrust into the woman's hands as a "free gift," has proved effective.

In addition to the Maytag washers, the store carries the G-E line.

Utility Bureau Aids In Completing 30 Electric Kitchens

OMAHA, Neb.—Fifty-five kitchen plans prepared, 10 new kitchens completely electrified (i.e., equipped with refrigerator, range, and water heater), 20 additional kitchens bumped up into the all-electric classification through addition of ranges and water heaters, and several electric dishwashers and disposal units installed—that's the record chalked up by Nebraska Power Co.'s Electric Kitchen Planning Bureau in its first year of operation.

Inasmuch as the utility operates on a cooperative basis, most of the equipment installed was sold by independent dealers with the aid of the power company's kitchen bureau and sales force.

The utility's Electric Kitchen Planning Bureau was established at the beginning of 1938 after a survey had revealed that this service would be of utmost value to appliance retailers in the company's territory.

The activity was headed by Edward Northup, whose duties included acquainting dealers with the new service and contacting architects and builders to sell them on the advantages and sales points of the all-electric kitchen idea. A quota calling for completition of 30 such kitchen units was set up for the year.

To aid in the hunt for prospects, all utility employes were asked to turn in names of any prospective builders they heard of, and several publications listing prospective builders were subscribed to. All prospects were contacted immediately by Mr. Northup or by the utility's all-service salesman in the territory in which the prospect lived.

Cincinnati Plans Seventh Progress Exposition

CINCINNATI — Seventh annual Electrical Progress Exposition, cosponsored by the Cincinnati Electrical Association and the Cincinnati Times-Star, is scheduled to be held during the week of March 20 in the Union Central Annex.

A Window Display Designed 'For Women Only'

This action window display, highlighting the various convenience features of a refrigerator, is typical of the windows employed by the I.K. Electric Co. of Little Rock, Ark. to attract the particular attention of housewives.

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City System Offers Rebate For Range Installations

ESCANABA, Mich.—A $5 rebate on the first month's electric bill of persons installing electric ranges has been voted by the city council in a move to increase sales of power by the city-owned power plant.

The action, taken last week, follows meetings between city officials, appliance dealers, and contractors at which means of increasing electrical appliance sales were discussed. Effect of the rebate is to lower the installation charge on electric ranges from $25 to $20.

'Help the Customer Sell Herself' Idea Proves Successful For Dealership

LITTLE ROCK, Ark.—"Help the customer to sell herself," theme of the entire merchandising plan of the I. K. Electric Co. here, is responsible for much of the store's success in dealing with women customers, thinks A. I. Korenblat, store manager.

"Women make up their minds slowly," he declared. "They like to leave the store and ponder over what they have seen and heard, especially if the article they are considering costs more than a few dollars. For this reason we make a point of always giving women prospects sales literature which they can carry away with them and study in their homes at their convenience."

PLANNED DISPLAYS

Window displays are planned with the women prospects in mind, the dealer states. Small items, such as irons, electric cooking utensils, fans, and lamps, are always placed on tables or stands to enable women passersby to visualize them more easily in their own homes.

Mr. Korenblat puts emphasis on action window displays as he has found that they attract the greatest amount of attention.

The window, which is changed every week, is the responsibility of one man, who devotes considerable time and thought to making his displays into real salesmen.

"Our window costs us approximately the same amount as an extra employe would cost," Mr. Korenblat declares. "But what an employe it is! It's on the job morning, noon, and night, telling, with electricity, our story of modern electrical appliances to thousands of passersby. An electrical dealer just can't get by without good windows.

ATTIC FAN

"One window, which attracted many prospects, was built around an attic fan. The display included a model home with the fan in action. Attic fans are still new enough to be somewhat of a curiosity, but we are proving to ourselves that just about any attractive merchandise can be sold if it is pushed.

"Whenever we sell electric wiring and appliances for a new home, we always call the woman customer's attention to the giant fan. Sometimes, although we do not sell the fan then and there, we receive an order for the additional wiring which will make the fan possible in the future."

A rest alcove, where the customers may relax in comfortable chairs and look over the literature supplied by various manufacturers of electrical appliances, is one of the features of the store's interior design. Surrounded by the most effective merchandise displays in the store, this alcove makes innumerable sales for the company. Electric cooking appliances, including waffle irons, hostess sets, roasters, grills, etc. are displayed on a modernistic stand. Another display features small radios.

Another factor which aids the customer to sell herself and which Mr. Korenblat values highly is the table of manufacturers' booklets and folders.

TAKE BOOKLETS

"When we do not complete a sale, we urge the customer to stop at the table and make her selection of booklets and folders," Mr. Korenblat said. "This table also is helpful when all our salesmen are busy, as the prospects may select a handful of reading matter and wait in the rest alcove until they can be served."

Comfortable chairs are placed in the refrigerator display room also, and Mr. Korenblat explains that the store has found it pays to leave the undecided customer alone in the display room where she can sit down and view the different models for as long as she wishes.

"Some women make decisions better when they are left alone," says Mr. Korenblat, "and our private display room provides an ideal arrangement for this."

Art Collector Proud of This Kitchen

Kitchen of W. H. Sutter in Tacoma, Wash. A collector of Chinese art objects, he spent much of his time talking about his all-electric kitchen when being interviewed over the air. Note the unusual location of the dishwasher-sink and waste exit.

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Talk on Art Ends In & About Kitchen

TACOMA, Wash.—When a home owner who goes "on the air" to tell radio listeners about his Chinese art treasures ends up by talking about his all-electric kitchen, it's a pretty safe bet that he's a satisfied customer.

Radio listeners who tuned in on station KVI recently to hear an on-the-spot description of W. H. Sutter's Chinese art treasures learned not only about ancient Chinese culture, but also heard, first-hand, how Mr. Sutter's very modern kitchen is contributing to his family's comfort.

The Sutter home is world-famous for its collection of Chinese art, and was built for the purpose of housing this collection. Radio program was in the form of an interview, broadcast by short-wave hook-up directly from his home.

When Mr. Sutter and his young lady interviewer arrived in the kitchen, the collector launched into an enthusiastic description of his electric kitchen, mentioning by name the Hotpoint refrigerator, range, dishwasher, and waste exit.

New England Men Launch Drive on Kelvinator

DOVER, N. H.—A merchandising campaign for Kelvinator electric refrigerators, water heaters, and other appliances was launched by the Dover district of the Twin State Gas & Electric Co. at a recent meeting of distributors' representatives at the American House here.

Dealers from Rochester, Somersworth, Farmington, and Dover were present, as well as the Twin State's local superintendents, home service representatives, and service men. Several speakers addressed the gathering, among them Taylor Harvey of Manchester, sales manager of the Public Service Co. of New Hampshire; Jack Durkee of Boston, New England Kelvinator representative; Edwin A. Norton, vice president, Manchester Coal & Ice Co., state distributor for Kelvinator; and Mark Bowen, sales promotion manager for the Dover district of the Twin State concern.

Special guests at the session were Mayor Samuel Blair of Dover, Michael White, former Dover mayor, Dean Case of the University of New Hampshire, and Dean Moreland of the Massachusetts Institute of Technology.

Electrical Appliances Opens Downtown Store

DILLON, S. C.—Electrical Appliances, Inc., Frigidaire dealer here, has opened a downtown store and has stocked it with a full line of appliances.

What 'They Say' About War Down In Washington

By George F. Taubeneck

War By Spring?

"They Say" down in Washington nowadays that war will probably break out in Europe before the end of Spring. It seems an accepted fact down there, and it's coloring all their thinking and planning. It is even resulting in a different attitude toward business and industry.

By "they" we mean officials of the War Department, Navy Department, Department of Commerce, Department of Justice, and Military Affairs Committee of the House of Representatives, with whom the writer talked in "off-the-record" interviews last week-end in Washington. Their belief is based on advices received from Ambassadors Kennedy (London) and Bullitt (Paris), and from the Military Intelligence Service.

Here's how they figure it:

(1) Italy, Germany, and Japan have the whip-hand now. By striking simultaneously, they can scatter England's navy, surround France, and take over the Mediterranean and the Suez canal.

(2) The longer the "axis powers" wait to strike, the poorer are their chances for victory, because England and France can eventually win the armament race, so superior are their resources and wealth.

(3) The English and French people are in a fighting mood. Before Munich they weren't. After Munich they were, and their wrath is growing daily. Foreign observers say that they may not tolerate another diplomatic retreat such as the one staged by England and France at Munich.

* * *

Odds on the Axis

Furthermore, "they say" down in Washington, that Germany and Italy have a good chance of winning. Here's why:

(1) London might be destroyed in a day. Hitler can send a thousand bombers over every hour for at least six hours, dropping their new high-concussion liquid air bombs which whipped Barcelona, their new incendiary bombs, and their new gas bombs.

London, as the writer can testify, is a firetrap. Buildings on the whole aren't fireproofed, and they are huddled and jammed together. Berlin, on the other hand, has its important buildings widely separated, fireproofed, and of advanced steel-and-concrete construction. Even if England's air forces could match Germany's, Berlin isn't nearly so vulnerable. Incidentally, Paris could probably resist destruction by air well, too.

Italy and Germany are inferior on top of the water, but much superior underneath. Their new submarine fleets (almost four times the size of Germany's during the last war) threaten starvation to England.

Franco's conquest of Spain has enabled German gun emplacements to nullify the strength of Gibraltar, has given Italy command of islands which offset England's naval bases in the Mediterranean.

* * *

Germany and Russia

Most sensational of all is the disclosure that Germany and Russia may be on the verge of an alliance. Some even claim there has been an understanding between these supposedly bitter enemies all along.

The story goes that Germany and Russia have been waging their vituperative war of words—communism vs. fascism, which both work out to be pretty much the same thing—as a smoke screen. England and France have thus allowed Germany to progress under the mistaken assumption that she was going to fight Russia.

If Russia and Germany do combine, along with Italy, it would seem difficult for England and France to preserve their empires. Thus the three totalitarian states could divide up Europe and Africa between them.

Germany and Russia, it is pointed out, are natural trade allies. Germany needs Russia's raw materials; Russia needs Germany's manufactured products. Trade between the two should make both rich.

It should be noted here that men we talked with in the Treasury Dept. aren't so sure war is coming. They say that if Germany and Russia conclude a trade agreement, Germany's major problems will be solved, and she won't need more territory.

* * *

Where Do We Stand?

Now where do we stand on all this? There are two schools of thought about this down in Washington.

One school, that of the Administration, reasons that this is a war between ideologies—between Democracy and Dictatorship. In that case, they believe that we will be drawn inevitably into the conflict. They consider England and France as our first line of defense, and want us to strengthen them as much as possible.

The other school, that of the anti-Administrationites, feel that we had no business in the last war, that we have no business in the next, and that we should keep out of it by all means.

Both schools unite on the idea of preparedness. The Administration wants us to prepare to help England and France. The other school reasons that if we have a big navy, a big air force, and an adequately equipped army, nobody will want to monkey with us.

* * *

Superior Industry

America, they will all tell you down in Washington, would be invincible in war. Why? Because we have the world's best industrial plant. War nowadays isn't a matter of heroes and horses. It's a matter of machines. The two most recent wars proved that.

In Spain, foreign mercenaries, well-equipped, defeated much larger forces of men fighting for their country and their lands. The same has been true in the invasion of China by Japan.

But, it is pointed out, our industrial plant must be ready to change over from the technique of peacetime production to the technique of wartime production. In the last war it took almost a year for that changeover to be made. If another one comes, the army and navy hope it will be only a matter of weeks.

* * *

What's to Be Done

As matters stand now, we have a navy that could keep any possible enemy or combination of enemies (except Great Britain) away from our shores on either side. If we were attacked simultaneously in both oceans, that would be a different matter.

We have a fine, if small, standing army; but its equipment is inadequate. Both the navy and army need planes.

Planes are a problem. As soon as one is ready for production, it's already obsolete in the drafting room. Three years ago, for example, France was the world's greatest air power. But her planes are so inferior to those produced in 1938 that France now ranks below Germany, Italy, and Russia in air power.

The problem is that of readying the **facilities** for airplane production at a great rate when needed. We also need a front row of some 3,000 planes, and a second row of an equivalent amount, to replace those which might be shot down, until the time when we could get on a mass production basis. It is also noted that of any given number of planes, from 15 to 20% are always in the shops.

We need also to recruit a great number of mechanics. We have or can get plenty of pilots, but there exists an acute shortage of skilled men who can make and service planes and plane parts.

As to guns, tanks, and ammunition, the navy and army have manufacturing arsenals which can produce about 10% of their wartime needs. They make everything from battleships to baby buggies, caissons to caskets.

Private industry, on the other hand, has grown rusty in the interim since 1919. Both production tools and production technique are needed. There has been no money in making munitions, so they haven't been made. That's why the government arsenal factories have been maintained—so that a nucleus of trained workers and research men could be kept on the job.

It is proposed to give "educational orders" to industry during the next two years, both to help industry to regain war production technique, and to supply the army and navy with the equipment they need to **begin** a war.

* * *

Do You Want Some?

If you want some of that business, go down to Washington right now. See Charles Edison, assistant secretary of the navy, or Louis Johnson, assistant secretary of war.

The government will buy the machine tools you need (and retain ownership). Skilled men from the arsenals can be had to help train your own workmen and supervisors. Any new techniques or improved equipment you may develop will be well paid for.

Army and navy officials intend to spread this work among as many factories as possible—both to "educate" more concerns, and in the hope of developing new products and production methods.

It should be noted that neither the War nor the Navy Departments share the general New Deal antipathy toward business and industry. They work with business, understand it, and appreciate it. (Unofficially and off-the-record they can get just as heated about the Walsh-Healey Act, the NLRB, and the hamstringing of the utilities as any Old Guard Republican you ever heard.)

They point out, however, that the necessity of enlisting business in the drive for preparedness is likely—in fact, has already begun—to be an education to the New Dealers. The latter are learning that business men can be patriotic, unselfish, and cooperative to a high degree.

* * *

Will We Fight?

Granted that preparedness seems vital, will we be drawn into the next war? Congressmen say that depends entirely on the temper of the American people. Right now the answer is "NO!" Whether the answer will remain negative depends, in large part, on the success of the pro-England propaganda.

The New Dealers, those who are engaged in Remaking America, realize that the regimentation of a war would give them the opportunity to push their "revolution" to a successful conclusion. They feel that they could gain complete control and keep it, thus ending our present system.

Some of them are beginning to realize, too, that only a war can preserve them in the Halls of the Mighty. As things are going now, they are on their way out.

Hence they are joining the Save Our Mother Country, Hands Across the Sea propagandists who have been working so shrewdly to get us on England's side again, just as they did two decades ago.

Naturally, they find us receptive. Most of us hate Hitler and Mussolini. We like democracies, and believe that England and France are democracies. We are humanitarians.

But we don't stop to think that England and France, until they got all the land they wanted, were just as ruthless, just as cruel, just as oppressive as Italy and Germany now are. They don't stop to think that the Versailles Treaty cheated Italy, and crushed Germany and kept her poor.

Jewish oppression? At one time in her history England chased all the Jews out of the country and excluded them for 250 years.

There is something to be said, morally, on both sides of the question.

There is also **plenty** to be said on the futility of our going to war over our convictions and our sympathies. The last war gave us a blow from which we haven't recovered yet. The next one could wreck us.

As Predicted Two Years Ago

To combat the North American Local for the Fighting of Russia's Wars and the Hands Across the Sea Foundation for the Fighting of England's Wars, who seem to be mightily aided and abetted by an ambitious President so concerned over his place in history that already he has established his family mansion as a national shrine—the writer would like to call attention to a few paragraphs he wrote some two years age.

Shortly after culminating a world tour with a few weeks in London, the following was written for AIR CONDITIONING & REFRIGERATION NEWS:

* * *

Hands Across the Sea

England feels foredoomed to another tremendous war. She feels that she will need our help in that war—our men, our money, our guns, our inventive genius, our production facilities.

And the Gentlemen from Downing Street have been engaged for almost two years in a subtle, yet enormously extensive, publicity campaign designed to enlist America on England's side in the next conflict.

"America and England together," I heard over and over, all around the British Empire, "could police the world. Nobody would dare start anything if we were allied."

That's the theme of the campaign. Most Englishmen who voice those sentiments seem sincerely to believe them: although no serious and informed student of foreign affairs today feels for a moment that anything, any alliance, can halt the inevitable progress of the Four Totalitarian States (Germany, Italy, Japan, Russia) toward war.

England and America together would be a tough adversary for any foe or combination of foes. Not necessarily invincible, but tough. That, however, isn't the point. This is:

America has no business in the next war.

No matter where it starts, England can't keep out of it. She's vulnerable in too many points.

Japan eyes Malaysia covetously. Insurrection threatens in India. Palestine is in the throes of a minor civil war. Italy menaces Egypt and the Mediterranian possessions. Germany stirs hungrily on the continent. A tremendous uprising of Moslems all through the East is possible.

Why should we pull England's chestnuts out of the fire?

America is menanced by nobody. Canada is the world's finest neighbor. A new era of good feeling is opening in our relations with Central and South America. We are getting out of the Philippines—and just in time.

The United States has plenty of troubles at home without looking abroad for more.

* * *

Colony Gone Wrong

The English are inclined to regard us as a Colony Gone Wrong. They overlook the fact that the flood of immigration during the nineteenth century far overbalanced the English element in our population.

They further fail to recognize the probability that had the United States remained an English possession, they would likely still be confined to the 13 original colonies on the Atlantic Seaboard.

Even had the English wrested the Louisiana Purchase lands from France, and Texas and California from Mexico, America's gates would not have been thrown open to the tides of European immigration. Hence this nation would be as underpopulated as Canada, New Zealand, and Australia.

Nor, lacking the spirit of free enterprise which made America great, would the colonists have developed the country to its present amazing position.

Even though we speak English, and admire the English, we are not English. We feel no call to preserve "the homeland."

But they think otherwise. They think we should be more sympathetic toward their problems. They think we should cancel the war debts. And they think we should complete a military alliance with their forces.

As indicated before, the publicity campaign designed to further this end was going full blast last year. A most important part of that publicity campaign was the education of the English people to a new appreciation of the United States. The idea was to engender good feeling between the nations by eradicating from the English minds the impression that Americans are semi-barbarous.

That vast feeling of superiority which the average Britisher feels for the average American had to be broken down before Downing Street could feel safe in coming out into the open with its drive for an English Speaking Union.

What Others Say

Frazier Hunt's View Of English Attitude

Recently, in reading Frazier Hunt's "One American, and His Attempts at Education"—the autobiography of a University of Illinois boy who became one of our most famous foreign correspondents,—I came across the following passage with reference to Sinclair Lewis and his first visit to England:

"Main Street had shot Red to the very top of American authors. I always had a suspicion that the real reason he was so popular at this time with English craftsmen, and the British public generally was because he had cracked down so frankly and brutally on the American small town. He painted just the sort of picture of the American scene and its crude intolerances that the average Britisher wanted to read. They welcomed him as one of their own kind—superior, a bit snooty, and extremely critical of inferior breeds."

* * *

Captured Ambassadors

"Spike" Hunt's remarks re what happens to American Ambassadors at the Court of St. James are illuminating, too. Read the following, and then recall the public statements of our present ambassador, Joe Kennedy, since last August.

"Now, by and large, America has always been represented at the Court of St. James by splendid and patriotic men. But after all an American ambassador's real job . . . is to report on the true conditions of the country to which he is attached—and at times to translate American ideas to his hosts. That country's ambassador stationed in Washington, will in turn, report to his own government on the state of mind and affairs in America.

"For an American ambassador to do his job correctly he must keep inviolate his own peculiar American point of view. He must remain wholly American. He must not become involved too deeply in the social life and the mannerisms of the foreign land he is sent to. He must remain completely himself. As George Washington warned his country, he as an individual must keep free from all foreign entanglements.

"Now all this looks easy enough, but in a country as appealing and as experienced as England it is extremely difficult to do. Number 10 Downing Street and the British Foreign Office have as their unconscious allies literally hundreds of charming and wise men and women, who are only too glad to act as tutors to official Americans. They discover the interests and hobbies of their distinguished guests. They do nice things for them, never once forgetting that is it essential that the British point of view be cautiously but surely put across.

"I do not mean to intimate that all this is done with malice aforethought. Nothing so crude as that ever happens in England. It is done as suavely and beautifully as the whole system of honorifics is carried out. Englishmen are subtly bribed by knighthoods and peerages, while the more direct American system of openly splitting up the kitty is looked

(Concluded on Page 9, Column 1)

What Others Say

(*Concluded from Page 8, Column 5*)

on as unspeakable. All in all, the proper British education of an American ambassador is the work of true artists.

"It is a rather brutal thing to say but I must finally get it off my chest: never was America so misrepresented as by the sainted Walter Hines Page, President Wilson's intimate and trusted adviser and ambassador to London from 1913 to well into 1918. Statues should be erected to Mr. Page in every corner of the British Isles. If he had been the secret British Foreign Minister himself, he could not have done a more perfect job of selling the British point of view, lock, stock, and barrel, to the White House.

"To all intent and purpose, he was the British Ambassador to the Court of St. James—with American affiliations. He quietly but surely charged Mr. Wilson's mind and imagination into accepting the inevitable necessity of saving England's skin. The British system won him and sunk him. And to this day Britishers quite rightly cross themselves when his name is mentioned.

"But give them the names of two real and genuine American ambassadors and see their temperature drop. I refer to Colonel George Harvey and General Charles G. Dawes. Here are two rugged individualists who didn't like to drink tea and wouldn't drink tea—and, like the French philosopher and his spinach, were glad they didn't like tea, because if they had liked tea they would have had to drink tea, and they didn't like it.

"Colonel Harvey liked to drink Scotch. General Dawes didn't even drink that. Colonel Harvey would crunch his set of rather poorly fitting store teeth, and his wise eyes would twinkle behind their nests of crow's feet—but the reports he sent home were seasoned with a healthy, vigorous American flavor. And the same thing was true of the papers of General Dawes.

"It didn't mean the slightest thing to either man if the smartest hostess or the fattest dowager in all England entertained him at week-end parties. Neither of them cared for the professional treatments usually given to American officials. It wasn't any sense of inferiority that caused them at times to be accused of being a bit unnecessarily crude—it was only a determination not to be pulled into the trap.

"They were going to remain straight Americans in spite of duchesses, lords, ancient country families, and the whole hands-across-the-sea racket. They wanted no one to honor them by saying that they were "one of them." That was the last thing they wanted to be.

* * *

We Can't Help

After discussing further manifestations of English propaganda, including "the battalion of British lecturers invading the mud flats of America," Mr. Hunt puts forth the well-weighed opinion that, no matter how much we might sympathize with England, there isn't much we can do for her today.

"Falteringly, and with customary hypocrisy, England takes a belated stand against these three prowling powers. Her sacred route to India is jeopardized by Italy's control of the Mediterranian; Germany challenges her old balance of power on the Continent; Fascist help to the Spanish rebels endangers her once impregnable Gibraltar; and now Japan intrudes in her Chinese sphere of influence and trade up the Yangtze and behind her postdated fortresses at Hong Kong.

"While she hurriedly arms she again turns to America for help. Tragic 1917 prepares to repeat itself.

"America must make up her mind whether or not she is prepared to go to war to check Japan's intrusion in China, protect British interests there—as well as in the Mediterranian and on the Continent. Certainly there is but one thing that either Japan, Italy, or Germany understand this day; that is the realism of force.

"Speeches on morality, clumsy boycotts, and resolutions of censure mean nothing to a world largely interested in gaining new territories and advantages or in protecting old ones.

* * *

Nothing Settled

"England apparently presses us into a compromising position in the Far East. If she can get us involved there she can pull us into the European situation. And American blood, money, and treasure will again fight England's wars. And again nothing permanent will be settled. Those who have will continue to hold, and those who want and need will continue to want and need.

"Even victories do not guarantee justice. No matter how noble our intentions, we cannot solve China's true difficulties. She must fight and dream and die battling for her own rights.

"Nor can we bring honor and integrity to frightened Europe. If so little was gained by the first world slaughter by what reasoning do we think final solutions can be reached by a second wholesale butchering?

"I am no believer in Fascism, but likewise I am no believer in Glasgow slums, or India's neglected millions, or Indo-China's abused natives. The world does not learn by the sword. And the old men who penned the lore of the Bible may have been right; those who take up the sword have every chance of perishing on its bright edge."

* * *

Lets Not Be Fooled

Before we get too excited about "defending Democracy," let's check up on what we're actually defending. Is it up to us to decide who is to rule subjugated colonies in Africa? Is it our duty to defend the division of the spoils in the Versailles Treaty.

Wisely the United States rejected that manifestly unfair and bound-to-make-trouble treaty some two decades ago. We swiped no colonies. England and France did. England and France also welched on their promises of land to Italy. As a result, Italy and Germany have been desperately poor ever since the War, while England and France have waxed fat and slothful.

We may not like Hitler and Mussolini, but if Clemenceau and Lloyd George hadn't been so greedy at Versailles, these madmen might never have been needed—and hence tolerated—by the German and Italian people.

Any way you look at it, the next European War is none of our business.

Alter Co. Branch Store Opened In Detroit

DETROIT—To serve dealers and service men in the Detroit area, Harry Alter Co., Inc., wholesale jobber of refrigeration and air-conditioning parts and supplies, has opened a branch at 5013 John R St. here.

Manager of the branch is Robert Grosshans, who formerly was manager of the Borg-Warner Refrigeration parts division in Detroit, and is well known to service men in this territory. Stock of approximately 5,000 items will be carried.

Opening of the new branch brings to eight the number of establishments in the Alter parts "chain." Headquarters of the company are in Chicago, with other branches in New York City, Cleveland, and St. Louis.

Commercial Refrigeration

Milk Bars May Offer New Possibilities For Commercial Refrigeration Sales

NEW YORK CITY—Opening a new field of sales opportunity for commercial refrigeration salesmen is the trend toward the establishment of retail milk and milk product dispensaries in or adjacent to towns and cities throughout the country.

Marking another step in this movement is the attractive milk bar which was opened recently on the young people's floor of Lord & Taylor's, one of New York City's leading department stores.

Introduced as a permanent feature providing a service for mothers, and others who take children shopping, the Lord & Taylor milk bar is reported to be the first department store installation of its type in the country.

INSTALLATIONS LIMITED

Known installations of milk bars here are limited, so far. At least one of the big hotels—the Waldorf-Astoria—only recently has established a milk bar off the Park Ave. foyer at the entrance of the Empire Room.

These two milk bars alone received wide and favorable press notice on their inauguration, and the Lord & Taylor venture at its preview attracted many civic leaders.

In addition to providing facilities for the satisfaction of the public's casual demands for milk and dairy products, establishment of milk bars and similar retail outlets serve as incentives to consumption of these products, and afford publicity for their sponsors.

Located on or within a short distance of main traffic arteries, these establishments catch both the full stream of business and commercial highway movement, the motorist on tour, and the short pleasure-tripper.

Commenting on this movement, the American Produce Review in a recent issue says:

"In all these (milk and milk products dispensaries) effort has been made through neatness, obvious cleanliness, and attractive building design and setting together, naturally with the maintenance of the highest possible quality in the products served, to build constantly increasing customers, both transient and regular. Many of these have proven highly successful.

"In more recent months, this type of scheme to more widely popularize the milk-drinking habit and the general use of dairy products by commercially profitable means has spread to the larger cities. In cold numbers, city milk bars so far actually set in operation are unquestionably few and far between.

REALIZING POSSIBILITIES

"To an increasing degree, however, owners of these establishments and facilities, daily experiencing tremendous concentrations of public attendance—the hotels, the larger stores, theaters, and moving picture houses, railroad stations, and the like—are becoming cognizant of the possibilities in this field.

"The idea of the milk bar seems sound for such places, not alone from the angle of operating profit possibilities, but likewise from the standpoint of definite goodwill and publicity value."

Milk Bars Boon To Commercial Salesmen

If milk bars become popular, commercial refrigeration salesmen will benefit. Shown above is the bar on the young people's floor of Lord & Taylor, New York City department store.

Cooling Protects Blood For Transfusions

BALTIMORE—Human life now is being saved at the University Hospital here by means of a supply of human blood kept fresh at low temperatures made possible by modern refrigeration equipment, for this hospital has adopted the method of refrigerated blood storage known as the transfusion bank system.

Under this system, a supply of each of the four recognized types of human blood is stored in sterile flasks within a refrigerated space, to be drawn upon as needed. Taped to the outside of each flask is a test tube containing a sample of that particular type of blood, so that the flasks themselves do not have to be opened until the blood is to be used.

Whenever any of this blood is used, the supply is immediately replenished with blood drawn from regular donors or from relatives of the patient using the blood. All donors are carefully typed, however, to ensure the right kind of blood. Donors must be over 18 and under 45 years of age. No blood is kept over 10 days. After this period it is thrown out and replaced with a fresh supply.

Use of the transfusion bank, first of its kind in Baltimore, was advocated by Dr. Raymond Hussey, head of the hospital's department of clinical pathology.

Dole Brings Out New Ice Cream Conversion Unit

CHICAGO—New with Dole Refrigerating Co. this year is an ice cream cabinet conversion unit wherein there are no connections necessary inside the cabinet. The unit is adjustable to fit all types of cabinets, and openings in the face of the plate permit installation of expansion and hand valves.

The company's line of cold plates for truck installation has been enlarged to include 10 standard sizes, compared with but four sizes last year. The plates are applicable to both the high temperature and low temperature transportation fields.

Application of vacuum plate refrigeration for use in both the locker and sharp-freeze rooms of locker storage plants also is being pushed by the company this year.

Deissler Introduces Small Radial Compressor; Unit Has 4 Cylinders, New Sealing System

GREENVILLE, Pa.—Designed for use in household refrigerators, water coolers, and small commercial applications, a four-cylinder, ⅛-hp. compressor of radial design has been introduced by Deissler Machine Co.

Attractively streamlined in appearance, the unit is said to incorporate new features of compactness, simplicity, and accessibility.

Compactness is achieved by designing the machine to accommodate a new type of circular condensing coil and receiver assembly, which is built around the compressor, giving smallest overall clearance and increased condenser efficiency.

For accessibility, discharge valves, motor parts, etc. are removable without dismantling the entire unit. All service and installation connections are located at the front, including liquid line connection from receiver, suction line connection, oil level valve in crankcase, electrical connection, oil reservoir for motor bearings and seal, and discharge valve from compressor to condenser.

Complete motor and compressor assembly employs only one shaft, with two main bearings, which carries the rotor of the motor and provides a crank pin at the lower end to convert rotary motion of the shaft into reciprocating motion for the four small single-acting, radially disposed pistons. While the shaft is turning 1,725 r.p.m., on 60 cycle current, the actual piston speed is said to be much less than that of the conventional belt-driven compressor.

The Diceler radial compressor is not hermetically sealed, since the inverted motor, which is directly connected to the compressor, is said to afford a new type of sealing system, called "Duolubriseal," which approaches the effectiveness of the hermetically-sealed unit, and actually seals against oil instead of refrigerant or air.

There are two separate oiling systems. In the motor oiling system, the oil reservoir, which communicates with the oil well around the motor shaft through an oil passage in the motor casting, is filled with a permanent supply of oil, which keeps the two motor bearings and outside of seal face completely flooded with oil.

In the compressor system, a small oil tube called the "rotoforce oiler" on the end of the crank pin pumps oil, by circular motion of the shaft, from the lower oil reservoir or crankcase to the main connecting rod bearings and inside seal surfaces, resulting in forced-feed lubrication of these elements. Pistons and piston pins are lubricated with oil thrown by centrifugal force from the main connecting rod bearings.

By keeping the motor winding separated from the compressor, motor heat is not introduced into the refrigerant, it is claimed, and the motor parts may be repaired or replaced without dismantling the compressor. This design also allows the use of direct-current motors where required.

Shaft extension permits mounting of a fan on the motor compressor shaft, to force air directly downward over the condenser fins and through the motor winding. Separate fan motor for condenser is not required.

Usual base plate of the unit has been entirely eliminated, the assembly being suspended on four mounting springs, attached to lugs cast integral with cylinder casting, to simplify installation, eliminate vibration, and effect quieter operation.

Suction valves also have been eliminated, and are replaced with a new improved design of suction port, which extends entirely around the cylinder wall to insure taking in a full charge of gas on the suction stroke. This feature, together with reduction of all compression clearances to absolute minimum, is said to insure greatest volumetric efficiency.

A capacitor-type motor with automatic overload protection has been built into the unit, for all alternating current applications, since this type of motor provides a strong starting torque and employs a simple form of centrifugal switch to open the starting winding circuit.

Par Units Include Oil Separator

DEFIANCE, Ohio—A low side oil separator built into the body of all the company's "Par" line of compressors, a complete new close-coupled compressor unit in ¼ and ⅓-hp. capacities, and a new baked enamel finish on all Par models—these are the innovations announced by Modern Equipment Corp. for 1939.

The new close-coupled units are designed for use on bottled beverage coolers, self-contained display cases, and other applications where space is limited.

The new finish, said to fill up flaws in the castings as well as to fill the tiny holes which make the castings so porous, will be applied to all Par units as soon as the new baking ovens and conveyer systems purchased by the company can be placed in operation.

Distributor-Dealer Doings

Birmingham Dealers Sold $2,200,000 In 1938

BIRMINGHAM, Ala.—More than 21,000 appliances with a retail value of $2,200,518 were sold by Birmingham dealers last year, reports to the dealer sales department of Birmingham Electric Co. reveal.

Electric refrigerator sales amounted to 5,091 units, with a retail value of $1,018,200, to be far and away the leader in dollar volume for the year. Radio sales totaled 11,900 units, with a retail value of $671,730.

Electric ranges ranked fourth in number of units sold, 827, and the dollar value amounted to $99,732. Stoker and oil burner sales were reported at 594 units with a dollar value of $201,000. Laundry equipment (washer and ironer) sales totaled 2,516 units, valued at $194,740.

Water heaters and attic fans followed in that order, with sales of the former amounting to 102 units, valued at $7,146, and attic fan sales totaling 85 units, valued at $7,860.

1,166 Crosley Dealers View New Products

HOUSTON, Tex.—New 1939 models of Crosley refrigerators, radios, ranges, washers, and other products were shown here recently to 1,166 dealers in the Houston territory at the fifth birthday party sponsored by Reader's Wholesale Distributors. Hymen Reader is present of the distributing organization.

Crosley's new Reado facsimile radio printer was shown and demonstrated by Thomas W. Berger, Crosley general sales manager. Also attending the meeting were: H. F. Clayton, Crosley district manager; W. E. Titus, distributor at Dallas; and H. E. Dorril, merchandising manager, Houston Lighting & Power Co. Charles Green, Ham Smith, and Larry Stevens, representatives of the Reader organization, assisted in the meeting.

500 Frigidaire Salesmen & Dealers See New Lines

NEW ORLEANS—More than 500 dealers and salesmen previewed the 1939 lines of Frigidaire refrigerators, ranges, water heaters, and commercial refrigeration products at a sales convention in the Tulane Room of Hotel Jung here. R. C. Golt, Frigidaire district manager, was in charge of the program.

Brown Electric Warehouse Destroyed By Fire

LITTLE ROCK, Ark.—Warehouse of Brown Electric Co. at 1300 East Ninth St. was destroyed by fire last week, causing stock loss estimated at $8,000. W. M. Brown, who owns and operates the firm with his son, V. N. Brown, said they had no insurance.

Hill Plumbing Co. Holds Cooking School

SUMTER, S. C.—Hill Plumbing Co., General Electric dealer here, recently held a well attended cooking school under the direction of Mrs. Nancy Pullin, home economist. Many prizes were distributed among the women attending.

G-E Contracts Office Set Up In Portland, Ore.

PORTLAND, Ore.—A district office of the General Electric Contracts Corp. was established at 607 Woodlark building it was disclosed last week. Edwin Baker is the new manager.

Delehanty Heads Sales

WARREN, Ohio—I. F. Delehanty has been appointed head of sales promotion for the fan and blower division of Peerless Electric Co. here.

New England Hotpoint Men See Demonstrations

MANCHESTER, N. H. — Demonstrations of electrical appliances featured the recent all-day meeting of 250 New England Hotpoint dealers. C. P. Myrick, Hotpoint district manager was in charge of the meeting.

Morning session included a cooking demonstration by Miss Ilah Manchester, home economist, in addition to demonstrations of electric dishwashers, water heaters, and ranges. Hotpoint's 1939 refrigerators and laundry appliances were displayed and demonstrated after a banquet.

Mr. Myrick was aided by the following Hotpoint representatives: Henry Erath, Elmer Ruesch, John Hendricks, Gardner Cole, and Carl Stiles.

Kirby, Van Houten Get Hotpoint Posts

CLEVELAND—Walter B. Kirby has been appointed electric refrigeration specialist in this territory for Edison General Electric Appliance Co., and Burr H. Van Houten has been selected as electric range specialist.

Before coming to Hotpoint, Mr. Kirby for seven years was a divisional manager for Apex Electrical Mfg. Co. Mr. Van Houten's electric range experience includes 10 years with Consumers Power Co. in various sections of Michigan.

Jos. Zamoiski Co. Adds Bendix Home Laundry

BALTIMORE—Joseph M. Zamoiski Co., Norge and Philco distributor here, has taken on distribution of the Bendix home laundry in Baltimore, western Maryland, and part of West Virginia.

Bush Re-elected President Of New York Gas & Electrical Group

NEW YORK CITY — A. Lincoln Bush, president of Belmont Electric Co., Inc., was re-elected president of the Electrical & Gas Association of New York, Inc., at its annual meeting held recently at Grand Central Palace.

Other officers elected were: E. F. Jeffe, vice president of Consolidated Edison Co. of New York, Inc., first vice president; J. H. McKenna, eastern sales manager of A. J. Lindemann & Hoverson Co., second vice president; Hugh Cuthrell, vice president, Brooklyn Union Gas Co., third vice president; David S. Youngholm, vice president, Westinghouse Electric & Mfg. Co., fourth vice president; P. Schuyler Van Bloem, president, Viking Lights, Inc., treasurer; S. J. O'Brien, president, S. J. O'Brien Sales Corp., secretary; and H. C. Calahan, district manager, General Electric Supply Corp., assistant secretary of the association.

Rate Reduction Theme Of Appliance Drive

SOUTH BEND, Ind.—Capitalizing on the electric rate reduction which went into effect on the first of the year, 65 South Bend electrical appliance dealers have launched a cooperative year-long "opportunity program" urging consumers to cash in on the reduction by investing their electric rate savings in time-saving appliances.

Cut one-half cent a kilowatt from the previous standard, the new rate provided an ideal theme for the appliance sales drive. Advantages of current models of appliances over those already in homes will be stressed, as will the fact that additional appliances cost little extra to operate, inasmuch as the added electricity used places the current in a lower rate class.

Special emphasis is being placed on radio sales during the month of February, and many dealers have reported unseasonable sales increases.

Air Conditioning

Speed Range, Danger of Accidents Hold Back Auto Cooling, Gould Tells SAE

DETROIT—Taking power from an automobile engine over a wide range of speeds is the principal problem in connection with summer air conditioning of passenger automobiles, R. E. Gould of Frigidaire Corp. said in an address before Society of Automotive Engineers' members here recently.

Other factors which impede the progress of air-cooling equipment in this field are the wide variance in local codes and regulations governing the use of refrigerants, and the hazards inherent in the destruction of a refrigeration system in the event of an accident, Mr. Gould declared.

Cooling of a passenger automobile requires that 3, 4 or 5 hp. be taken from the power plant of the car, at speed ratios which change from 10 to 1. Refrigeration compressors will not operate satisfactorily in this range of speeds, he said.

Humidities must be reduced in mobile air-conditioning work as in other comfort systems, Mr. Gould stated. This may be accomplished by cooling the air with a refrigerant and then re-heating it, or by means of chemicals. Any combination of the two systems is too cumbersome for use in mobile work, Mr. Gould believes.

Reviewing the history of mobile air conditioning, he related work that has been done in railway cars during the past 10 years. About one-third of the railway cars having air conditioning are cooled with ice, as this proves most economical where cars are used for intermittent periods and must "stand-by" for hours or days between periods of service, he stated.

With a full passenger load the ordinary railway car requires 7 tons of ice every 24 hours, as the ice is melted at the rate of approximately 600 lbs. per hour. This type of system becomes very expensive when used over continuous periods of any length, Mr. Gould continued.

About 12% of the railroad cars use steam jet systems, principally on passenger lines which operate their own cars, as it is necessary for all cars to remain connected to the engine to assure a continuous source of power for each cooling unit. These systems operate on 270 lb. of steam per hour at 50 lb. pressure.

MECHANICAL COOLING

Fully half of the railway cars are now cooled with mechanical compressors, Mr. Gould said. Refrigerant used in the majority of these systems is "Freon-12," and a direct-expansion coil is used as a means of cooling air. The refrigerant is condensed by air, air and water, or water alone, depending on the design of the system.

Operating range of the systems are from 37 lb. per sq. in. at 40° F. to 200 lbs. at 130° F., but the systems are designed for a maximum of 1,000 lb. pressure, to withstand heavy-duty railroad service.

Using 8,000 c.f.m. of fresh air, it requires approximately 14 hp. to cool the average railway car. Most systems take power from a 15 to 20 kw. axle generator and use storage batteries over stand-by periods. Belts and pulleys or gears are employed to take off power, but the problem is to design a mechanism which will compensate for the swing of railway trucks on curves.

He believes that a suitable internal combustion engine would solve many problems in railroad air conditioning, but restrictions of most railroads preventing the use of "volatile" fuels makes it impossible to use gasoline motors for this purpose. Development of the light Diesel engine may have a marked effect on this field, he said.

400 COOLED BUSES

Between three and four hundred air-conditioned passenger buses will be on the highways this summer, Mr. Gould continued. Most of these buses are equipped with 10 to 12-hp. gasoline engines which provide power for refrigeration machines developing 3½ to 4 tons capacity.

The gasoline engine and refrigerating machine are usually located under the passenger space, with a fan-coil unit located either at the front or rear of the bus in an overhead position. The so-called "bulkhead" system of air delivery is used, or the cool air is admitted to the bus through perforated panels in the ceiling.

Equipment weight for bus conditioning is usually from 1,100 to 1,700 lbs., which represents a reduction of 33% from the systems used in railway car conditioning.

Contractors' Secretary Says Residence Can Be Cooled For $75—But There's a Catch

ATLANTIC CITY, N. J.—Joseph C. Fitts, national secretary of the Heating, Piping, and Air Conditioning Contractors National Association startled a group of association secretaries in convention here this month with the statement that a small residence can be cooled in summer for $75.

It developed that the house Mr. Fitts had in mind is the $4,000 model bungalow which he characterized as the one "that the Federal Government is talking about" and the inexpensive cooling system turned out to be —an attic fan.

"The public does not realize," Mr. Fitts said, "that in a small home with radiator heating, winter air-conditioning equipment can be added at the start or later on for as little as $75 extra. The same thing applies to summer cool-air conditioning with an attic fan.

"Industry is turning out air-conditioning units on a production line basis now, and materials are 20% cheaper than in 1926. Installing them in the individual home is a tailor-made job where we contractors come into the picture.

"The small homes is a wide open field not only for air conditioning, but for proper heating. Besides fitting new homes, there is a tremendous field for replacement."

Expansion of the Association's five year apprenticeship system and a future trade promotion drive were also discussed at the meeting here. The apprentice training plan utilizes both shops and industrial schools, drawing apprentices from high schools and colleges.

Frick Publishes Guide For Cooling Buyers

WAYNESBORO, Pa.—A guide for use by prospective buyers of air-conditioning equipment in the selection and use of the various types of systems now available for installation has been prepared by Frick Co.

Principles of air conditioning most generally used for human comfort can be grouped under four main headings, the bulletin states. The systems described are typical of installations using finned coil surface in the air system.

First system described is the multiple unit system, recommended for smaller stores, restaurants, offices, and installations of 30 hp. and under, where relative humidity may be permitted to vary within the comfort zone.

Described next is the controlled air volume system, where there is not much moisture to be taken out of the air, since the latent heat is a relatively small proportion of the total load. This system works most successfully in office buildings.

The automatic by-pass system, described as the third system, is recommended for high latent heat loads, caused by emission of moisture from large groups of people, from cooking and hot foods, or where quantities of water are generated from any source. It is recommended for large restaurants, theaters, auditoriums, or wherever there is a large concentration of people.

Fourth, or direct system, is of special use where the latent heat load is a large part of the total load, and where the total load is high in comparison with the volume of air circulated. Places with low ceilings can use a system of this type well, it is said, as can any other place where the "ultimate" is desired in effective results.

In addition to describing operation of the various systems and their individual advantages, the booklet gives model layout for the installations, and tells how each system is controlled.

New Furniture Store Has 50-Ton Zoned System

BIRMINGHAM, Ala.—Zoned and controlled so that each floor may be conditioned independently, an air-conditioning system has been installed by Shook & Fletcher Supply Co. here in the new, six-story store of Haverty Furniture Co.

A 50-ton central refrigeration system is installed in the basement. On the roof of the building is an evaporative condenser. Each floor has thermostatic control.

New Streamlined Subway Car Air Conditioned For Riders & Motors

NEW YORK CITY — A regular "straphanger's Rolls Royce" is the new streamlined, air-conditioned subway car now being assembled in Battle Creek, Mich. for its demonstration run next month over tracks of the Brooklyn-Manhattan Transit System.

With a body of aluminum and duralumin, painted in panels of light blue and ivory, set off by Chinese red strips, natural aluminum molding, and a deep blue roof; with interior finished in blue-green, and seats upholstered in green mohair; with resilient rubber "sandwiches" between the steel tires which run on rails and the wheels themselves, and steel-and-rubber springs to cushion and cut vibration, the new car is equipped to give subway-users a lot of ride for their nickel.

One of the most important advances is in the use of air conditioning, not only in the car, but to protect the air going to equipment and motors. The car is equipped with a pressure ventilating system, having large-capacity blowers which clean the air before entrance into the passenger compartments.

Air-cleaning blowers are here used for the first time in the rapid-transit field, it is claimed.

Thermostatically controlled heat is incorporated with the ventilating system. Current produced by stopping the car is used for car heating, an unusual "by-product" development.

Two sets of interlocked control equipment are suspended from the body under-frame. All equipment is contained in aluminum boxes, which are made parts of a ventilating system which keeps the equipment clean and at a uniform temperature.

This ventilating system also is supplied with air from blowers which force it into the traction motors, carrying away excess heat generated by dynamic braking. Improvements in motor cooling save losses and reduce cost of maintenance, it is claimed.

One important objective in the complete air conditioning of the car, its motors, and auxiliary equipment, has been the elimination of dust, brake filings, and other matter which cannot intrude into the essential parts of the mechanism, and thereby cause excessive wear, short circuits, and other damage.

North Carolina Contractors Set Up Organization

GREENSBORO, N. C.—Representatives of North Carolina's air-conditioning contractors met here recently, set up an organization, and elected Jesse Page, Charlotte, president.

Other officers elected included R. V. Sisk, Charlotte, vice president; and S. A. Sigler, Greensboro, secretary-treasurer.

Commercial Refrigeration

Proper Retail Store Refrigeration Is Called 'All-Important' as Food Processors Form 'Frosted Foods Institute'

CHICAGO — Formation of the National Frosted Food Institute, on a temporary basis, was accomplished here recently at a special meeting of about 75 representatives of different branches of the food industry called by the National Food Distributors' Association.

Fred E. Scott, former sales manager of John F. Jelke Co., was elected temporary organizing chairman, and the Institute was given an office at 5 Prospect Place, New York City.

Already Mr. Scott has issued a general letter to "the frosted food industry," with a nomination blank for chairmanship of committees, nominees to serve on the permanent organization committee of the National Frosted Food Institute.

Among the numerous committee chairmen to be named are: refrigeration chairman, quick-freezing methods chairman, retail store equipmen chairman, manufacturing equipment chairman, standardization chairman, trade press chairman, and consumer education chairman.

Stated purpose of the Institute is to coordinate the various factors in the frozen foods industry.

At the organization meeting here, John E. Cain, president of the National Food Distributors' Association, explained why this organization is sponsoring the formation of the National Frosted Food Institute by giving two primary reasons.

PURPOSE OF INSTITUTE

"One," declared Mr. Cain, "is for the protection of its members who have been for some time, or who will be later on, distributors of frosted foods.

"Two is that programs of the scope of the proposed frosted foods institute require an enormous amount of preliminary work to get the movement started. It is a well known fact that 'what's everyone's business is no one's business.' It was with the thought in mind that any further delay in the actual work of beginning such a frosted foods institute would have an increasingly bad effect on the future of the frosted food business as a whole."

Mr. Scott was chairman of the meeting and in his opening address declared that standards of quality must be established, in refrigeration, in packaging, in transportation, and in distribution.

REFRIGERATION MAIN FACTOR

Refrigeration, he said, is as important a subject as packing itself. Even though leading packers and brand owners may have standardized their products as to quality and package, the frosted food products must be protected so as to reach the consumer in first class condition.

The industry itself must supervise every step in the transportation of the package, and must see that the product arrives at the retailer's display case in good condition.

Quick-frozen foods, Mr. Scott declared, have created a reputation for quality, but this prestige can be seriously damaged in a single day by any one packer who is concerned only with immediate profit. It is better for the industry itself to set standards of quality than to have the government do so, he added.

DEALER'S CASE A PROBLEM

"The last step in the refrigerating end of the product, of course, is the dealer's display case," Mr. Scott continued. "As you all know, it is quite commonplace to have dealers allow the display cases to get above a safe temperature, which, of course, means that the package gets to the consumer in unsatisfactory condition.

"Thorough educational propaganda must be formulated and intelligently used so that everyone connected with the distribution of the product from packer to retailer will know his own part of the job, and will see that the equipment used is adequately refrigerated, and the consumer properly instructed in the handling and use of the product."

Mr. Scott estimated that frozen foods at present represent 1% of the total volume of food distribution in the United States, but pointed out that distribution of frozen foods is confined to between 5,000 and 6,000 outlets.

With reference to the retail display case for the frosted foods, Mr. Scott pointed out that although manufacturers have done much work in the past, considerable more research work must be conducted and certain standardizations adhered to to get this end of the business properly organized.

Continuous educational work must be done on the subject of refrigeration, said Mr. Scott, referring to refrigeration in the retail store, in the wholesale warehouse, and in transportation.

He expressed his hope that D. E. Perham and B. E. Seamon of the American Society of Refrigerating Engineers, who attended the session, would help get the Institute under way by cooperating on the refrigeration problem.

0° RIGHT TEMPERATURE

J. F. Nickerson, of American Institute of Refrigeration, told the food distributors and industry representatives that zero is the ideal temperature for quick-frozen foods, and that 5° F. is just about the maximum for safe storage.

Methods of freezing quality food products were discussed by M. T. Zarotschenzeff, vice president and technical director of National Frosted Foods, Inc.

Albert A. Sprague, Jr., vice president of Sprague, Warner & Co., (Richelieu brand foods), startled the food distributors by asserting that 70% of the consuming public has never heard of frozen foods.

Mr. Sprague based his statement on results of a survey conducted in Chicago by his company, and declared that the crying need of the frozen foods industry is for advertising and distribution.

MUST MAINTAIN QUALITY

The distributors were again shocked by Mr. Sprague when he revealed that the survey showed evidence of the selling of off-quality frozen foods at cut prices. This double danger threatens woe to the industry unless it is quickly headed off, he warned.

Quality and standardization of packages was advocated by Mr. Sprague as the first step in increasing frozen food consumption.

"One housewife getting a bad package means that she does not want any more frosted food," declared Mr. Sprague.

"If packages were standardized, it would help everybody, because the distributors would then be in a position to always buy their products from the outstanding packer of each product.

"It will help the case people, too, because it will enable them to design a case that will be a great deal more flexible and a great deal more acceptable to the trade, because the variety of packages today confuses both the consumer and dealer alike."

STANDARD PACKAGE

Progress toward the standardization of packages has been made by the Frosted Foods Institute of California, the distributors learned from L. F. Noonan, Oakland packer.

Mr. Noonan added that almost all of the California packers have enrolled in the state organization, and suggested that other state groups be formed which would cooperate with the national body.

More careful research work on the part of case manufacturers is necessary for the production of equipment which will assist in the improvement and increase of frosted food distribution, asserted W. D. Jordan, sales manager for Liquid Carbonic Co., Chicago.

Such research work, Mr. Jordan proposed, could be stimulated through the means of the national institute.

Coordinated work by the institute would enable the packaging companies to intensify their study of the various problems of packaged frozen foods, utlimately resulting in increased consumer acceptance, said R. E. Lowey, Container Corp of America, and Edward B. Weil, Shellmar Corp.

AID FOR THE FARMER?

In his address, Mr. Lowey said that quick-frozen foods provide a partial answer to the farmers' problem of selling produce by taking choice foods out of immediate distribution channels and giving the farmers a return above the average when sold later.

Public reaction to frosted foods today is much the same as public reaction to the electric refrigerator 12 to 15 years ago, Porter F. Leach, New York merchandising and advertising consultant, informed the distributors.

Basing his statements on the results of several surveys and consumer investigations, Mr. Leach said that most housewives know almost nothing about frozen foods.

Just as back in the early 1920's a refrigerator was an "electric ice box" or a "Frigidaire," said Mr. Leach, so today there is no distinction on the part of the buying public between the different brands of frozen foods. Thus, if any one package of frozen foods tastes good to the consumer, that consumer reacts favorably toward frozen foods in general. But if any one package is not good, frozen foods receive a blackeye.

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Turn to the Right

FIVE will get you ten down in Washington today that the New Deal is washed up. Many Congressmen will tell you that it is. Statisticians who have been studying the results of the fall elections, plus the experts who take sample polls, swear that there has been a sharp change in the public sentiment. And bureaucrats, from cabinet members on down, are already acting on the assumption that there has been a Turn to the Right.

Only Roosevelt, say the Washingtonians, hasn't caught on. Or, if he has, he refuses to translate the handwriting on the wall.

Politicians Piling Off the Bandwagon

The change in the manner of the crusading New Dealers is almost pathetic. From high-stepping, swaggering confidence, their manner has turned to one of bewildered frustration.

The politicians in the group, the seasoned veterans and ambitious newcomers who went along with Roosevelt just for the ride, are piling off the bandwagon. Straws in the wind point toward the new direction of public sentiment, and they aren't going to be caught napping.

Results of Fall Elections Taken Seriously

As a matter of fact, Washington politicians seem to take the results of the fall elections more seriously than does the rest of the country. Elsewhere business men were encouraged by those results, but they still have a tremendous fear of what might come next. According to the chart studiers down in Washington, however, the New Dealers won't have a chance in 1940.

The only thing that can save Roosevelt and his gang, say some Congressmen with whom the writer talked last week, is War. Believing it to be both their last and their best chance to Make Over America, the New Dealers are taking great interest in the coming conflict in Europe. But there are plenty of Congressmen who are grimly waiting with an axe for any and all proposals which might lead us to abandon our neutrality.

No New Reforms Contemplated In 1939

No new reforms are contemplated during the present session of Congress, it is reported. Big fight will be over neutrality, with minor ones concerned with well-organized attempts to modify some recent reforms (including the Wagner Act) and reduce whirlwind governmental spending.

The Congressmen have landed, it seems, and have the situation well in hand.

What Caused the Shift In Sentiment?

What has led the country to this shift in sentiment? The Washington dopesters figure it out like this:

(1) People want jobs. After six years of the New Deal, the unemployment figures show practically no change. And the WPA is a poor substitute for a job in private industry. Young men who so heartily embraced the New Deal at first now see a life somewhat as follows—19 to 22, the CCC; 22 to 60, the WPA; after that, an Old Age pension. They want something toward which they can look forward; they want to be ambitious.

(2) A national debt of $40,000,000,000—and still rising like an Ohio river flood—is beginning to worry, and even frighten, people. Debt, to the average man, is something he owes, something that must be paid, and something to be feared. Even if one were to agree with the New Deal fairy-wand economists that public debt is relatively meaningless, you can't convince a lot of voters that debt isn't debt, and the politicians realize it.

(3) Middle class revolt against the New Deal is well on the way. Minor irritations are piling up—social security tax payments, punching timeclocks to comply with the Wage-Hour Act, and, if one is in business, the thousand-and-one forms one must fill in and send in to Washington.

People Tire Even Of Their Favorites

People are tired of seeing Roosevelt's name on the front page every day, even if they have been for him. (Teddy R. was smarter—he wouldn't allow his name to be frontpaged more than twice a week.) It's like the story told about the voter in ancient Greece: Aristides the Just was on his way to the Athenian polls to vote for his own re-election, when he fell in step with a voter who "knew him not."

"How are you voting today?" asked Aristides.

"Against Aristides," said the Athenian.

"But why?" asked Aristides.

"Because I'm tired of hearing him called 'the Just.'"

Signals of Inflation Now Recognized

(4) Inflation is here, and people are beginning to recognize it. Before the New Deal, a thousand dollars in the bank brought $40 annually in interest. Today it brings, maybe, $15. To many slowly awakening voters, the answer suddenly becomes simple. Money isn't worth so much today.

Wealth redistribution, even the "social-minded" economists are beginning to see, is not the answer. It slows the "velocity of exchange" in the middle and upper classes, and thus keeps business retarded. There is a great "no man's land" between psychology and economics, a factor which must be taken into account by anyone who wants to Change the System.

(5) Business men, who have been solidly against the New Deal since the first days of the ill-starred NRA, are beginning to find their voices.

(6) Farmers, always individualists, are revolting against AAA regimentation, especially since it has succeeded neither in reducing surpluses or raising prices. After five years of government control and manipulation of farm production and of money and credit, all designed to raise the prices of farm products, the prices of farm products are lower today than they were at the beginning.

Southern Congressmen Have Been Alienated

(7) Alienation of the South is just about complete. One Democratic representative from a southern state told the writer that "Roosevelt won't control a southern delegate to the next Democratic convention." The South is angry about their small helpings from the national gravy bowl of government spending under the New Deal. The South resents keenly the New Deal's wooing and winning of the Negro vote. Southerners, or at least southern congressmen, were furious over the attempted "purge" last fall. The South is naturally conservative, anyway.

(8) Even Labor isn't solidly behind Roosevelt any more. Resolutions passed at the last A.F. of L. convention seem highly significant in this respect. And the A.F. of L. has thus far proved far more potent at the polls than the C.I.O.

Of course, if the United States is euchred into the next war, sentiment may change. But as matters stand now, business men should feel quite relieved. While we are not out of the woods, it is apparent that we are Turning to the Right.

They'll Do It Every Time . . . By Jimmy Hatlo

LETTERS

Nothing To Sing About In Barbados

W. S. Monroe & Co., Ltd.
Bridgetown, Barbados, B. W. I.

Editor:

Your letter to the writer was filed accidentally before it was answered. In going through our files a few days ago, I came across this letter.

You are quite at liberty to publish the story, and should you at any time require any information on refrigeration matters in the West Indian market, I shall be only too pleased to secure and forward same to you.

With regard to the refrigerator price cutting situation—this has considerably improved, the distributors having found it best to work together as near as possible.

How are Coldspot refrigerators working out in the U.S.A.? We are having any amount of trouble with them recently. Shipments arrive with warped doors—new units take too long to freeze water into ice as compared with other makes—when once the expansion valve gets out of adjustment it is seldom that it is possible to get it correctly operating again, etc., etc. One customer recently threatened to throw his into the street. Any information you can supply on how Coldspot is standing up in the states will be treated strictly confidentially.

Some months ago we began publishing a monthly magazine just as a publicity stunt. We have taken the liberty of placing your name on our mailing list. True, the first issues are nothing to sing about, but in time we feel sure of doing better.

NIGEL SEALE

Is There a Demand For A ½-Cu. ft. Box?

Landor Warehouse Co.
53 East 10th St.
New York, N. Y.

Editor:

We would like to know, through your publication, if there is a demand for self-contained Electrolux refrigerators, net capacity ½ to 1 cubic feet. If there is a demand, we would like to hear from you regarding the subject, as we have something to offer the public.

S. BELASCO

Praises Patterson's Air-Conditioning Talk

2505 W. State St.
Rockford, Ill.

Sirs:

I am enclosing herewith a money order for the renewal of the NEWS subscription for one year. It is a privilege and a pleasure to be able to look forward to another 52 issues of the NEWS.

I have been a constant reader of the NEWS and its various published books since way back in 1932. I can never praise the NEWS enough for the constant interest it continually creates for all its readers in the many activities of this great fast moving industry.

ROY M. SHIPMAN

P.S. I am enclosing a local newspaper clipping which may be of interest to you. James C. Patterson of the Carrier Corp. gave one of the finest, illuminating talks on air conditioning and the necessity of general education along the lines of proper air conditioning, and of applying of conditioning to the actual existing conditions rather than to a theoretical design standard.

Palestine Prospect

"Nechushtan," Ltd.
Breuer Building, Jerusalem

Editor:

By the U.S.A. Consulate we received your magazine, which found our best attention.

We are one of the biggest firms in the Near East for sanitary installations as well as for central heating and have in mind to add to our actions also the sale of air-conditioning machines. For this purpose we want to come in contact with a productive American manufacturer and ask you kindly to let us have particulars on some firms which meet our demands. Especially we are interested to get into touch with one firm which joins the production of all kinds of air-conditioning machines as all-year-around systems, summer systems, central and unitary systems, etc.

Firstly, we want to have special information and fully prospects; afterwards we have in mind to send two men of our enterprise to America in order to study the matter in its commercial questions as well as in the technical ones.

We therefore would be very obliged to you, if you would kindly write us the names of some firms which meet our demands, or send directly to them the enclosed copies of this letter.

A full statement of our enterprise is to be found at the U.S.A. Consulate at Jerusalem.

We thank you in anticipation for all your efforts.

NECHUSHTAN, LTD.

Yep, Still In Stock

The Eshelman Music House
117 South Sixth St.
St. Joseph, Mo.

Sirs:

Please send us one copy of "Appliance Selling Today," as advertised in REFRIGERATION NEWS May 4, 1938.

I tore out this sheet at that time, laid it aside with other papers, and in cleaning out my desk ran across it, and would like to have one of these books.

If it has all the information in it as the table of contents shows, it ought to be worth it. Upon receipt of the book, we will send you $1.00.

I am not enclosing the $1.00 due to the fact that since May 4 you may not have a copy left. We have been subscribers to REFRIGERATION NEWS for a number of years.

H. N. ESHELMAN

1023 E. Pleasant St.
Milwaukee, Wis.

Sirs:

Your paper has already proven to be very interesting in the few weeks that I have been a subscriber. Since becoming acquainted with its many fine features I would not wish to miss a single issue.

GLENN F. SHORT

Housewives, Dealers Will Win Prizes In Bendix Campaign

SOUTH BEND, Ind.—Challenging American women to compare the Bendix home laundry point by point with the methods of washing they are now using, Bendix Home Appliances, Inc. is staging a two-month "Comparison Campaign" during which 150 Bendix laundry units will be given away and Bendix dealers throughout the country will have a chance to sell themselves right into the Bendix all-expense cruise to Havana, Cuba in May.

Spearhead of the Comparison Campaign, which started Jan. 31 and will continue until April 1, is the so-called Comparison Contest in which 150 Bendix home laundries will be awarded free to the persons submitting the best letters completing, in 50 words or less, this statement: "The Bendix home laundry (the successor to the washing machine) saves time, work, money, and protects health, because. . . ."

COMPARISON CHART

To aid contestants in drawing their comparisons, Bendix has prepared a ready-made comparison chart with the advantages of the Bendix home laundry listed in one column, and with the other column left blank so that the contestant may check the corresponding advantages of her present method of laundering, and then compare the two lists.

Advertising and promotion for the contest are taking many forms. National attention is being drawn to the campaign through advertisements in Saturday Evening Post and Good Housekeeping. Dealers are being urged to spread the news of the contest and its awards by telephone, by direct mail, by newspaper advertisements, and by attractive store and window displays. Material for all these media has been prepared by the factory.

Three special sales training films also have been prepared, and Bendix dealers are urged to show them to their respective sales staffs. A separate set of questions accompanies each film, so that dealers may check their salesmen's knowledge of the material in the films.

DEALERS GET ENTRIES

Entry blanks for the contest may be obtained only at dealers' stores, and thus the dealers are given a good opportunity to talk each contestant into granting permission for a home demonstration on the basis that the merits of the Bendix home laundry cannot really be appreciated until the unit is seen in actual operation.

And once in the home, with the Bendix unit doing the family wash right alongside the old washing machine, the dealer has the prospect in a most strategic position.

To aid dealers in getting the Bendix laundries from store to home and back again, the company has made available a specially constructed cart-like trailer to be hitched onto the rear of any automobile. Not only does it facilitate transportation of the unit, but it also serves as a constant advertisement of the product.

But enough of the comparison contest. How about this "On-to-Havana" business? Well, in order to give dealers a running start for the comparison campaign, the Havana Cruise Contest started Jan. 15, two weeks before the opening bell of the comparison drive. And to enable dealers to cash in fully on the results of the "compare and sell" program, the Havana contest will continue until May 6, five weeks beyond the comparison contest's closing date.

Every sale made during this period will count toward the cruise, and winners in the contest will sail for Havana on May 18.

Crosley 'Reado' Records News, Pictures on Paper 'While You Sleep'

CINCINNATI—Crosley Reado, a facsimile machine for the reception of words and pictures by radio, now is in limited production and soon will be available to dealers for sale to radio amateurs and other experimenters. The unit will not immediately be sold on a commercial basis.

Outgrowth of some two years of experimentation by the Crosley Corp., the Reado receiving outfit consists of a printing section and a radio section. The complete set will retail for less than $150. The printing unit alone, which may be attached to any radio with a loud speaker output of five watts, will list at $79.50.

The Reado is equipped with a clock which the owner may set to start the machine operating at the time when Crosley radio station WLW starts its facsimile news and picture broadcasts. Then, without further care or adjustment, the Reado reproduces the news flashes and pictures on a strip of paper the width of two newspaper columns at the rate of three feet per hour.

Apparatus required for the transmission of the facsimile messages is located in the radio station.

HOW IT WORKS

The device operates by means of two synchronized fingers, one of which is incorporated in the transmitter and has a brilliant light at its tip. As this finger scans a photograph or printed column, another similar finger on the receiving unit moves across a strip of chemically treated paper, burning the white coating of the paper as it passes.

As the beam of the transmitting finger crosses a black spot on the printed page, the amount of light reflected into an electric eye which forms part of the transmitting mechanism is reduced.

This eye, which changes the light impulse into an electric impulse, is the controlling factor, for as the intensity of the electrical impulses which it transmits varies, so does the intensity and consequently the shade of the burned mark on the paper at the receiving end. Crosley engineers claim to have produced, in this manner, four shades of gray between black and white.

Both fingers move across the page 100 times in every inch of vertical space. These 100 lines, so close together as they are, form the reading type or the picture somewhat as the dots of a half-tone engraving form a picture in a newspaper.

FARTHER THAN TELEVISION?

Facsimile, it is said, can be sent over much greater distances than television, but the antennae and transmitter must be carefully protected against possible outside electrical interferences which tend to blur the facsimile just as static tends to blur radio sound.

Mr. Crosley has stated that he does not expect Reado to supplant newspapers, but that it might be useful to police and military forces in transmitting bulletins and maps. "So far," he declared, "it is a novelty, and I'm not sticking my neck out by making any predictions."

Frances Armin Joins Hotpoint Staff

CHICAGO—Miss Frances Armin has been appointed assistant director of the press bureau of Edison General Electric Appliance Co., Inc., manufacturer of Hotpoint appliances. Clinton Brown is director.

Miss Armin has had a long association with the electrical industry. In her new duties, Miss Armin will assist in contacts with national magazines and trade publications.

New Interior Features Distinguish 1939 'Dayton' Household Refrigerator

BUFFALO—Distinctive styling and a variety of shelf arrangements feature the new 1939 line of Dayton electric refrigerators just introduced by Heinz & Munschauer.

The new units were redesigned inside and out by Federico, one of the country's leading designers. Unique in the 1939 Daytons are the "Hi-Lo" shelf supports, said to make possible a great variety of shelf combinations.

There is a new lift-out shelf section, doubling the height and increasing the space for bulky foods. Attached to the bottom shelf is a sliding basket-type drawer and vegetable crisping compartment.

New evaporator includes a double depth tray and a new cube and tray release, in addition to the usual ice cube trays. Removal of these trays provides space for storing frozen foods. In the 6-cu. ft. model refrigerator, this space has a capacity of 3¼ gallons.

Radio-type cold control dial regulates the temperature, and the units are equipped with automatic defrosting arrangement.

Built in the lower section door is a non-refrigerated storage compartment for vegetables and other foods which do not require cold storage.

Rubber-mounted condensing unit provides quiet operation. There is 3-inch moisture-proof insulation in bottom, top, sides, and door.

The 1939 Daytons are built in 4, 5, 6, 8, and 10-foot sizes, with wide variety of accessories and equipment.

Specifications of the various models are given in the following table:

Automatic interior light and the 20-point temperature regulator are standard equipment on all models.

Class "J" refrigerators have crystal glass chilling trays; all the others have white opal trays.

Model 4-J has two single trays; models 5-J and 6-J have four single trays. The other models have various combinations of trays.

All models except the three in class J have a two-tone metal door with deluxe handle on the evaporator.

Salesmen Must Be Trained, Galpin Tells Iowa Group

DES MOINES, Iowa—W. D. Galpin, education director of General Electric Co.'s appliance division, outlined the value of salesmanship to the hardware merchants at the Iowa Retail Hardware Association convention here.

"Be alive, be awake, be alert, or the competition will take advantage of you," he declared. "Sales can be consummated only by salespeople—and they should be salespeople, not just order takers. The salesman must be trained. He must know and understand the art of salesmanship."

Air Conditioning

Surveys Show Number of Installations By Types of Business In Leading Cities

Editor's Note: Continuing in this issue is the publication of surveys showing the number of air-conditioning installations made in the principal population centers of the United States for the year 1938, and for previous years. These surveys were obtained through the cooperation of the operating power companies serving the various areas for which data is given.

Installations are classified by type of establishment in which they were made, and the number of installations with total horsepower rating is shown for each classification. This holds true for all surveys unless some other method of classifying or rating the installations is indicated in the heading over the columns of figures.

The data is presented under the following standard groupings: (1) all installations made prior to 1937; (2) installations made during the year 1937; (3) installations made during 1938; and (4) grand total for all years.

Also in this issue is the complete record of the air-conditioning installations made during 1938 in Kansas City, Mo., giving such information as name and address of the place where the installation was made, make of equipment installed and the installer, and the size of each installation. Chicago installations for 1938 were listed in full last week. Other such complete tabulations also will be published in later issues.

St. Louis

(Data Furnished by the Union Electric Co. of Missouri)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total* No.	Total* Hp.
Residences (incl. apts.)	389	615.74	258	540.38	234	312.4	885	1,593.78
Apartment Houses	1	21.5	10	205.02	2	103.33	13	329.85
Auditoriums	0	0.0	0	0.0	2	292.0	3	2,072.0
Banks	4	124.17	1	159.51	3	72.01	9	375.85
Beauty and Barber Shops	6	19.08	2	10.0	3	15.33	11	46.33
Brokers Board Rooms	7	153.95	5	255.43	1	33.5	13	481.38
Church	0	0.0	0	0.0	1	17.0	1	17.0
Clubs	8	266.81	3	509.25	2	79.01	13	897.08
Funeral Homes	11	182.43	14	241.39	8	168.49	34	683.28
Hospitals	6	12.77	3	36.08	4	74.25	10	120.63
Hospital Rooms	0	0.0	4	4.32	7	9.07	14	15.99
Hotels	19	1,083.25	24	2,262.76	11	353.62	54	2,228.2
Office Buildings	8	1,409.35	18	2,368.0	7	174.68	34	3,907.75
Offices	210	1,783.76	129	1,944.47	114	583.21	457	4,544.27
Restaurants, Cafes	51	1,002.89	24	551.45	26	372.37	105	2,203.74
Sales and Display Rooms	36	151.94	13	88.24	5	16.66	54	293.61
Stores, Retail	97	3,166.76	62	906.4	49	449.03	210	4,976.35
Stores, Department	0	0.0	0	0.0	0	0.0	2	233.5
Studios	0	0.0	2	6.83	7	48.32	12	191.99
Theaters	29	4,810.0	5	225.51	9	690.59	42	5,395.1
Miscel. Commercial	14	1,054.38	4	141.3	7	543.67	23	1,878.14
Industrial	43	1,639.74	19	652.28	6	92.01	68	2,801.73
Total	**939**	**17,498.52**	**602**	**11,110.43**	**508**	**4,455.55**	**2,067**	**37,587.2**

*Discrepancies in totals due to unaccounted for installations prior to 1937.

Evansville, Ind.

(Data Compiled by Southern Indiana Gas & Electric Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Offices	9	108.5	4	23.0	2	23.0	15	154.5
Banks	2	52.0	0	0.0	2	19.5	4	71.5
Stores	11	201.4	6	112.0	7	202.0	24	515.4
Restaurants	2	23.5	2	12.0	1	11.0	5	46.5
Funeral Homes	6	94.0	0	0.0	1	8.5	7	102.5
Theaters	7	238.0	1	53.0	1	45.0	9	336.0
Residences	2	4.0	2	9.5	3	11.0	7	24.5
Cocktail Rooms	2	22.0	3	30.0	3	38.0	8	90.0
Miscellaneous	1	10.0	2	7.5	2	25.5	5	43.0
Total	**42**	**753.4**	**20**	**252.0**	**22**	**383.5**	**84**	**1,383.9**

Distributor Creates Story In Pictures In Own Promotion Book

HARTFORD, Conn.—Presenting to prospects the complete story of how air conditioning and refrigeration are being used in New England and Manhattan, a well-illustrated descriptive booklet has been prepared for distribution by dealers by The Automatic Refrigerating Co. of Hartford, distributor of Frick commercial refrigerating equipment.

Air conditioning is discussed at considerable length, and its advantages are stressed to show the prospect how air conditioning can increase profit in his business.

Various uses of air conditioning are pointed out, each in a section of its own. First, air conditioning in restaurants is appraised, with numerous photographs of dining rooms and refrigerating equipment in establishments in New York City, Boston, and other cities "down east."

In similar fashion, the Automatic Refrigerating Co.'s dealer book takes up air-conditioned taverns and grills, retail stores, office buildings.

COVERS ALL APPLICATIONS

Refrigerating systems for institutions, process work, packing houses, farm duties, and cold storage work are pictured.

Text of the booklet is intended to prove to the prospect that air conditioning and refrigeration are well worth investing in.

Among the better-known places illustrated in the book to represent various types of air-conditioned establishments are the Ambassador hotel, Schrafft's restaurant Jack Dempsey's restaurant, and the Whaler Bar in Midston House, all in New York City; the Phoenix Fire Insurance Co., Hartford Fire Insurance Co., and Aetna Life Insurance Co. buildings, Hartford; Connecticut State Teachers College, New Britain; and the A. G. Spalding & Bros. plant at Willamansett, Mass.

In the section dealing with air conditioning in restaurants, the book addresses this message to restaurant owners:

ADVANTAGES TO RESTAURANTS

"The advantages to be gained by restaurants through air conditioning are so typical of what this improvement offers almost any business that they are well worth reviewing. Briefly stated, air conditioning:

"Draws people in from the hot streets like a magnet draws iron.

"Marks your place as being progressive and up-to-date.

"Enables your personnel to be active, attentive, and courteous despite the weather outside.

"Revives the appetite of patrons, and increases the size of their orders.

"Reduces the difference between summer and winter fare.

"Improves conditions for dancers, musicians, floor shows.

"Maintains quiet by excluding street noises.

"Keeps out dust by constantly filtering the air; furnishings and decorations last years longer.

"Permits people to wear better clothes with assurance; guests appear at their best.

"Makes it easier to keep a good class of help.

"Increases profits up to 300% in the summer months.

"Provides ventilation in winter.

"Avoids the drafts that go with ordinary fans.

"Uses up little or no floor space."

Detroit

(Data Compiled by the Detroit Edison Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Offices	110	645.16	59	348.25	37	230.16	200	1,223.57
Physicians' Offices	4	6.25	9	15.5	11	13.83	24	35.58
Dentists' Offices	3	1.25	7	9.25	11	7.58	21	18.08
Office Buildings	4	1,440.0	1	600.0	2	160.0	7	2,200.0
Banks	5	665.0	3	53.25	2	21.75	8	740.0
Restaurants	35	748.25	19	294.0	11	67.5	64	1,109.75
Hotels	9	1,072.0	4	196.0	1	175.0	11	1,443.0
Clubs	2	180.0	1	20.0	0	0.0	3	200.0
Residences	154	220.25	127	146.25	32	46.5	311	413.0
Department Stores	7	7,228.0	7	345.0	7	556.75	15	8,129.75
Furniture Store	1	272.0	0	0.0	0	0.0	1	272.0
Musical Instrument Stores	0	0.0	0	0.0	2	12.0	2	12.0
Retail Bakery	0	0.0	0	0.0	1	5.0	1	5.0
Confectionery Stores	14	204.0	8	75.5	4	21.0	26	300.5
Ice Cream Stores	1	15.0	3	35.0	5	21.0	9	71.0
Drug Stores	9	109.5	7	85.0	7	93.0	23	287.5
Photographic Supply Store	0	0.0	0	0.0	1	6.0	1	6.0
Cigar Stores	1	3.0	3	21.0	2	13.0	6	37.0
Jewelry Stores	8	68.0	8	80.5	1	3.0	16	151.5
Opticians & Optometrists	3	2.5	3	10.5	0	0.0	6	13.0
Pawnbroker	1	2.5	0	0.0	0	0.0	1	2.5
Clothing Stores	7	77.0	4	150.5	0	0.0	10	227.5
Women's Apparel Stores	16	254.5	9	60.25	4	17.75	27	332.5
Fur Stores	2	35.0	3	27.25	1	50.0	5	112.25
Shoe Stores	8	96.0	7	84.0	3	20.0	17	200.0
Markets	2	25.0	0	0.0	0	0.0	2	25.0
Auto Accessories Store	0	0.0	1	7.5	0	0.0	1	7.5
Miscellaneous Store	0	0.0	0	0.0	1	10.0	1	10.0
Electric Co., Sales Offices	4	59.0	0	0.0	0	0.0	4	59.0
Radio Broadcasting	4	117.25	1	1.0	0	0.0	4	118.25
Theaters	21	3,910.0	11	905.0	16	1,080.0	47	5,895.0
Bowling Alleys	2	40.0	1	20.0	2	65.0	5	125.0
Stock Exchange	1	50.0	0	0.0	0	0.0	1	50.0
Stock Brokers	1	75.0	1	25.0	0	0.0	2	100.0
Barber Shops	1	30.0	0	0.0	3	5.25	4	35.25
Beauty Shops	2	12.5	2	20.0	3	11.75	7	44.25
School	0	0.0	1	15.0	0	0.0	1	15.0
Church	0	0.0	0	0.0	1	70.0	1	70.0
Hospitals	13	235.33	7	86.5	3	28.75	23	350.58
Undertaking Parlors	9	57.0	4	9.0	5	18.0	18	84.0
Linen Store	0	0.0	1	5.0	0	0.0	1	5.0
Prison	0	0.0	1	1.5	0	0.0	1	1.5
Research Laboratory	1	50.0	0	0.0	0	0.0	1	50.0
Engineering Laboratory	1	630.0	0	0.0	0	0.0	1	630.0
Exhibition Building	1	125.0	0	0.0	0	0.0	1	125.0
Recreation Building	0	0.0	1	200.0	0	0.0	1	200.0
Automotive Manufacturing	4	673.0	2	40.0	2	409.0	7	1,122.0
Roller Bearing Mfg.	1	50.0	0	0.0	0	0.0	1	50.0
Tool Manufacturing	1	5.0	0	0.0	0	0.0	1	5.0
Instrument Manufacturing	0	0.0	1	3.75	1	2.0	2	5.75
Grinding Wheel Mfg.	0	0.0	1	25.0	0	0.0	1	25.0
Machinery Manufacturing	0	0.0	0	0.0	1	5.0	1	5.0
Watch Repairs	0	0.0	1	5.0	0	0.0	1	5.0
Games Manufacturing	0	0.0	1	10.0	0	0.0	1	10.0
Refrigerator Mfg.	2	55.0	0	0.0	1	180.0	3	235.0
Rubber Manufacturing	2	6.0	0	0.0	0	0.0	2	6.0
Drug Manufacturing	5	660.5	2	40.75	2	51.0	5	752.25
Candy Manufacturing	4	38.75	0	0.0	0	0.0	4	38.75
Mushroom Growing	1	10.0	0	0.0	0	0.0	1	10.0
Printing & Lithographing	3	25.75	1	25.0	0	0.0	4	50.75
Motion Picture Production	2	15.0	1	15.0	1	15.0	4	45.0
Miscellaneous	0	0.0	3	33.0	0	0.0	3	33.0
Total	**492**	**20,300.24**	**337**	**4,150.0**	**187**	**3,491.75**	**983**	**27,941.81**

The horsepower given is compressor horsepower only and does not include fans and pumps.

Los Angeles

(Data Supplied by Southern California Edison Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Citrus Packing Industry	55	2,333.0	16	771.0	14	242.0	85	3,346.0
Restaurants, Cafes, Etc.	12	100.0	26	91.0	19	57.0	47	248.0
Banks	7	29.0	8	66.0	2	4.0	17	99.0
Doctors and Dentists	7	18.25	8	41.0	3	7.0	18	66.25
Theaters	9	503.0	7	168.0	8	100.0	24	771.0
Stores	16	114.0	19	144.0	19	241.0	54	401.0
Motion Picture Studios	2	200.0	2	1,025.0	1	100.0	5	1,325.0
Drug Stores	0	0.0	7	78.0	7	44.0	14	122.0
Hospitals	5	37.5	5	26.0	1	3.0	11	66.5
Offices	15	93.75	8	137.0	2	40.0	25	270.75
Public Utility Offices	0	0.0	7	54.0	5	46.0	12	100.0
Hotels	0	0.0	6	54.0	1	5.0	7	59.0
Mortuaries	0	0.0	3	25.0	2	15.0	5	40.0
Residential	16	35.0	34	65.0	27	112.0	77	212.0
Miscel. Commercial	0	0.0	28	106.0	19	77.0	47	183.0
Miscel. Industrial	5	104.0	8	75.0	8	220.0	21	399.0
Libraries and Museums	1	43.0	0	0.0	0	0.0	1	43.0
Clubs	1	7.0	0	0.0	0	0.0	1	7.0
Desert Coolers	0	0.0	88	34.0	251	58.0	339	92.0
Total	**151**	**3,517.5**	**280**	**2,960.0**	**389**	**1,371.0**	**770**	**7,848.5**

Syracuse, N. Y.

(Data Supplied by the Central New York Power Corp.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Bakery	1	12.0	0	0.0	0	0.0	1	12.0
Banks	0	0.0	1	5.0	1	5.0	2	10.0
Barber and Beauty Shops	0	0.0	0	0.0	2	5.75*	2	5.75
Candy Manufacturers	1	19.0	2	3.2	0	0.0	3	22.2
Department Store	1	24.0	0	0.0	0	0.0	1	24.0
Ladies Apparel Shops	4	163.25	3	58.5	2	37.25†	8	259.0
Drug Stores	0	0.0	1	11.5	2	20.0	3	31.5
Funeral Parlor	1	18.0	0	0.0	0	0.0	1	18.0
Haberdashery	1	24.0	2	7.0	0	0.0	3	31.0
Hospitals	0	0.0	0	0.0	6	4.5*	6	4.5
Hotels, Cocktail, and Dining Rooms	2	110.25	3	44.0	0	0.0	5	154.5
Hotel Guest Rooms	0	0.0	0	0.0	20	15.0*	20	15.0
Jewelry Stores	3	13.5	1	6.5	0	0.0	4	20.0
Library	0	0.0	0	0.0	1	3.0	1	3.0
Office Buildings	1	31.75	0	0.0	1	215.0	2	246.75
Printing Establishment	1	152.5	0	0.0	0	0.0	1	152.5
Private Offices	6	7.33	0	0.0	38	35.5	44	42.83
Radio Studios	1	3.25	1	9.0	1	0.75*	3	13.0
Residences	1	1.75	3	9.0	14	10.5*	18	21.25
Restaurants	4	96.0	1	20.0	4	70.75	9	186.75
Shoe Stores	1	13.0	2	12.0	1†	10.5	3	35.5
Theaters	4	825.0	1	40.0	0	0.0	5	865.0
Fruit Ripening	2	51.0	1	8.0	0	0.0	3	59.0
Hosiery	1	3.75	0	0.0	0	0.0	1	3.75
Total	**36**	**1,569.58**	**22**	**233.7**	**93**	**433.5**	**149**	**2,236.78**

*Includes room coolers. †Three shops had additional equipment added.

Air Conditioning

Kansas City Mo.

(Data Supplied by the Kansas City Power & Light Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Bakeries	3	71.0	0	0.0	0	0.0	3	71.0
Banks	8	242.0	2	14.75	5	77.8	15	334.5
Beauty Shops	8	98.0	7	39.5	1	3.0	16	140.5
Buildings	6	2,322.0	4	1,245.5	3	111.5	13	3,679.0
Drug Stores	7	182.0	2	36.0	3	32.0	12	250.0
General Offices	72	648.16	27	660.5	34	404.8	133	1,713.46
Hospitals	17	61.75	4	46.5	2	7.0	23	115.25
Hotels	15	698.0	4	518.5	1	3.25	20	1,219.75
Miscellaneous & Industrial	17	262.5	5	420.0	9	129.0	31	811.5
Funeral Homes	14	158.5	3	89.5	1	7.5	18	255.5
Restaurants	56	1,073.88	20	234.66	12	95.16	88	1,403.7
Sales Rooms & Shops	48	1,397.25	25	1,201.75	24	453.5	97	3,052.5
Theaters	22	1,870.0	1	22.5	0	0.0	23	1,892.5
Private Offices	61	96.25	47	67.25	29	30.33	137	193.83
Residences	229	511.75	102	195.5	60	116.0	391	823.25
Total	**593**	**9629.04**	**253**	**4,792.5**	**186**	**1,466.66**	**1,032**	**15,888.20**

Dallas

(Data Furnished by Dallas Power & Light Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Apartments	6	17.33	7	55.3	3	7.73	16	80.36
Private Homes	91	173.41	59	226.78	79	176.24	229	576.43
Apartment Houses	3	47.0	1	31.5	0	0.0	4	78.5
Banks	3	874.16	2	198.0	2	105.5	7	1,177.66
Clubs	2	41.82	3	97.55	3	9.9	8	149.27
Doctors' & Dentists' Offices	2	2.05	2	2.25	3	11.43	7	15.73
Funeral Parlors	3	52.0	1	18.0	0	0.0	4	70.0
Hospital Operating Room	1	3.1	0	0.0	0	0.0	1	3.1
Hospital Bedroom	0	0.0	1	61.56	0	0.0	1	61.56
Hotel Rooms	0	0.0	5	946.16	3	11.95	8	958.11
Offices	59	279.61	42	201.3	43	192.05	144	672.96
Broadcasting Studio	0	0.0	1	36.0	0	0.0	1	36.0
Utility Co. Offices	2	245.25	1	1.0	0	0.0	3	246.25
Barber Shop	0	0.0	1	8.25	0	0.0	1	8.25
Beauty Shops	2	33.37	5	49.5	4	31.25	11	114.12
Hotel Coffee Shops and Dining Rooms	6	430.75	1	3.3	1	2.6	8	436.65
Office Buildings	10	840.73	7	1,121.8	7	2,014.0	24	3,976.53
Restaurants	25	302.65	13	196.58	20	223.46	58	722.69
Stores, Department	3	885.45	2	599.75	1	202.5	6	1,687.7
Stores, Retail	25	673.22	27	580.56	22	411.78	74	1,665.56
Theaters	23	1,231.0	0	26.0	2	213.08	25	1,470.08
Auditoriums	0	0.0	2	36.5	0	0.0	2	36.5
Churches	1	15.0	0	0.0	1	100.0	2	115.0
Libraries and Museums	0	0.0	3	211.49	0	0.0	3	211.49
Miscel. Commercial	6	79.32	4	43.25	0	0.0	10	122.57
Bakeries	5	48.76	1	4.0	0	0.0	6	52.76
Dairy Products	1	21.0	0	0.0	0	0.0	1	21.0
Fur Storage	1	8.68	0	0.0	1	3.33	2	12.01
Miscel. Industrial	1	22.0	7	135.25	9	63.56	17	219.81
Total	**281**	**6,327.0**	**198**	**4,909.63***	**204**	**3,780.45**	**683**	**15,017.08**

*273.99 hp. was installed during 1936 at the Exposition which was considered temporary. This equipment is now permanent and included as 1937 installations.

Territory of Pub. Serv. Co. of Okla.

(Data Compiled by Public Service Co. of Oklahoma)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Office Buildings	1	175.0	11	5,170.0	1	404.5	13	5,749.5
Banks	3	559.0	0	0.0	0	0.0	3	173.0
Clubs	1	105.0	1	33.5	0	0.0	2	138.5
Doctors and Dentists	3	9.0	0	0.0	1	11.0	4	20.0
Hospital	1	1.5	0	0.0	0	0.0	1	1.5
Offices	17	106.0	10	315.0	24	445.5	51	866.5
Restaurants	8	155.0	4	57.0	4	246.0	16	458.0
Stores, Dept. and Retail	10	406.0	8	438.0	6	266.5	24	1,110.5
Theaters	4	932.0	0	0.0	1	109.5	5	1,041.5
Billards and Pool	0	0.0	2	75.0	0	0.0	2	75.0
Residences	53	186.0	58	128.0	25	188.0	136	502.0
Laboratories	0	0.0	2	255.0	2	100.0	4	355.0
Hotels	0	0.0	4	352.0	2	212.0	6	564.0
Barber and Beauty Shops	0	0.0	2	23.0	1	2.5	3	25.5
Railway Car	0	0.0	0	0.0	1	50.0	1	50.0
Industrial	0	0.0	0	0.0	1	8.0	1	8.0
Total	**101**	**2,634.5**	**102**	**6,846.5**	**69**	**1,657.5**	**272**	**11,138.5**

Milwaukee Wis.

(Data Reported by the Wisconsin Electric Power Co.)

Classification	Prior to 1937 No.	Prior to 1937 Hp.	During 1937 No.	During 1937 Hp.	During 1938 No.	During 1938 Hp.	Total No.	Total Hp.
Private Homes	16	44.1	8	12.5	4	19.93	28	76.53
Bank	1	72.5	0	0.0	0	0.0	1	72.5
Club	0	0.0	0	0.0	1	5.15	1	5.15
Doctors' Offices	2	3.1	3	7.15	0	0.0	5	10.25
Funeral Parlors	8	82.85	0	0.0	3	25.0	11	107.85
Hospital Operating Room	0	0.0	0	0.0	1	23.5	1	23.5
Office Bldgs. (Private)	5	640.53	1	12.0	2	35.0	8	687.53
Office Space (Private)	17	79.25	4	29.4	2	31.5	23	140.15
Broadcasting Studio	1	10.0	0	0.0	0	0.0	1	10.0
Utility Co. Offices	1	64.0	1	3.0	1	177.0	3	244.0
Beauty Parlors	1	17.75	1	23.8	1	8.5	3	50.05
Cocktail Bars	5	53.0	4	42.5	0	0.0	9	95.5
Hotel Coffee Shops and Dining Rooms	3	173.5	2	130.5	0	0.0	5	304.0
Hotel	0	0.0	0	0.0	1	8.3	1	8.3
Office Bldgs. (Public)	0	0.0	0	0.0	2	148.3	2	148.3
Office Space (Public)	0	0.0	2	110.5	1	20.0	3	130.5
Restaurants	7	181.0	3	109.0	1	13.5	11	303.5
Department Stores	3	459.5	1	257.5	0	0.0	4	717.0
Apparel Stores	9	138.0	13	372.45	4	94.3	26	604.75
Drug Stores	1	18.0	2	62.5	0	0.0	3	80.5
Food Stores	3	12.15	5	13.05	1	5.3	9	30.5
Store, Miscellaneous	0	0.0	0	0.0	1	6.0	1	6.0
Theaters	8	2,142.0	0	0.0	0	0.0	8	2,142.0
Miscellaneous Commercial	3	27.65	0	0.0	0	0.0	3	27.65
Total	**94**	**4,218.88**	**49**	**1,183.75**	**26**	**621.28**	**169**	**6,023.91**
Self-Contained Units (Residential & Com'l.)	12	11.2	23	23.9	49	118.35	74	153.45

Air Conditioning Protects Old Art Treasures In Many Ways, Museum Curators Reveal

WASHINGTON, D. C.—Air conditioning will help to protect and preserve Old World art masterpieces and will provide a comfortable atmosphere for visitors in the new National Gallery of Art, which will be opened next year.

America's counterpart of England's National Art Gallery, France's Louvre, and Germany's Kaiser Friedrich Museum, the new institution, is being built along the Mall here, and will harmonize architecturally with the Capitol, the United States Museum, and other nearby buildings.

The late Andrew W. Mellon conceived and sponsored the gallery, donating his own private art collection, valued at $50,000,000, as the nucleus for a national display.

Air conditioning's main job in the art museum will be to maintain uniform temperature and humidity, since varying conditions cause deterioration of art possessions. Low humidity in winter, it is pointed out, causes parchment, wood, paint, and textiles to become brittle and crack. High humidity in summer stimulates growth of molds, fungus, and mildew.

As temperature and humidity rise and fall throughout the day, a strain is imposed on the structure of furniture, tapestries, and paintings.

"Bronze disease," a fungus growth which attacks bronze antiques excavated in Greece and Macedonia, apparently can be overcome only by two methods, states J. Francis McCabe, superintendent of the Art Institute of Chicago: by air conditioning, and by concentrated application of heat rays.

Air conditioning has completely eliminated "bloom" from the surface of oil paintings in the Frick Museum, New York, declares Dr. F. Mortimer Clapp, director. This bluish film of moisture, which shows up on varnished surfaces in damp weather, detracts from the appearance of a painting and prevents application of any preservative until the "bloom" is removed by a change to drier atmosphere, Dr. Clapp explained.

The Frick museum, endowed by Henry Clay Frick, boyhood friend of Mr. Mellon, has the most extensive system of museum air conditioning in the country at present. Installation was made three years ago.

Air conditioning also keeps dust out of the Frick Museum, says Dr. Clapp, and by operating the system with a slightly alkaline content in the air washer, it is possible to neutralize the acid content of the outside air. Dust is destructive to all fabrics, and sulphurous acid attacks metals.

New Data Given on Uses of Hair Felt

CHICAGO—A new catalog picturing, describing, and giving specifications and suggested applications of the various types of hair felt products which it manufactures for thermal insulation, sound absorption, and general cushioning has been issued by American Hair & Felt Co.

Alco Announces New Line Of Magnetic Stop Valves

ST. LOUIS—A new line of magnetic stop valves, available for liquid and suction line refrigerant control for Freon, methyl chloride, and ammonia, as well as for brine, steam, water, air, and gas, has been announced by Alco Valve Co.

The new type valves are listed as types SM and R, and have capacities ranging from 2 to 75 tons.

Tests indicate that the valves will operate under water, at reduced voltage, at higher maximum pressure differentials, and under very severe on and off service, Alco engineers claim.

Each valve is equipped with a kick-off spring, designed to eliminate residual magnetism difficulties and to assure quick closing.

The valves can develop full-rate capacity at a pressure drop of only 2 lbs., it is said.

Replacement Condensers Introduced By Bush

HARTFORD, Conn.—A new four-model line of counterflow water-cooled condensers has been introduced to the trade by Bush Mfg. Co. here.

These four models, for use with ½, ¾, 1 and 1½-hp. compressors, are intended as replacement models for water-cooled condensers or as booster units for air-cooled units.

A new line of replacement air-cooled condensers, covering a wider range of applications than the company's previous line, also has been introduced.

Some Steps In a New Simple But Strong Structure Principle Developed By Harvey Lindsay

Some of the steps involved in the Lindsay Structure principle. (1) Closeup of a sheet being fitted into the framing. Note how the formed edge of the sheet fits into the channel of the flanged framing member.

(2) The tensioner is fitted over the edge of the sheet—and into the channel of the flanged frame.

(3) Fastening the tensioner down. The screw goes through the tensioner and engages the back of the flanged frame, pulling the tensioner down tight over the edge of the sheet which is drawn taut in the process. The screw is locked by tapping its edge into two recesses in the tensioner.

(4) Putting on a corner cap. The curved edges are cut in a sawtooth pattern to facilitate smooth bending.

Engineering

Lindsay Structure Principle, Designed For Trucks, May Be Used In Storage Boxes

CHICAGO—A new type of all-steel truck body, built of patented steel framing and panel sheets manufactured by the Dry-Zero Corp., will become available to truck operators this month. The company will manufacture no truck bodies, itself, but will sell the necessary materials to licensed body builders.

The new type of body employs an entirely new method of construction which puts the steel panel sheets under tension between the framing members, drawing them together and bracing them so that the ordinary cross-braces, gussets, and struts are not required. The full tensile strength of the steel panel sheets is used. The sheets are fastened to the framing without the use of rivets or weld points upon which stresses are ordinarily concentrated.

This new method of construction was developed by Harvey Lindsay, president of the Dry-Zero Corp., and is called Lindsay Structure. Although originally designed for use in the transportation field, Lindsay Structure materials are already being used for the erection of small industrial buildings, shipping containers, cabinets, and similar products.

From the truck operator's viewpoint, bodies built of Lindsay Structure materials have four advantages. They are economical in first cost. They can be dimensioned to within half an inch of any size desired, using nothing but standardized material. They have greater strength per unit of weight. Because framing and panels are standard, repairs can be made quickly and cheaply.

From the truck-body builder's viewpoint, Lindsay Structure materials create an opportunity to build bodies of special sizes and for special uses by modern quantity production methods. Mr. Lindsay does not believe, however, that Lindsay Structure bodies will replace all custom built bodies. There are certain body shapes and styles to which Lindsay Structure is not readily adapted, he points out. There are other types of bodies where Lindsay Structure materials may be used in partnership with regular construction methods.

In no case do Lindsay Structure materials replace all the work ordinarily done by the commercial body builder. The materials merely provide a new method of framing and covering the body.

Lindsay Structure materials consist of standard framing members, panel sheets and fittings. The materials are fabricated by quantity production methods on special machinery developed by the company. The same framing, sheets and fittings used for truck-body construction are also being used for small industrial buildings and containers of various kinds. The use of the same materials for many purposes makes them more economical to produce, points out Mr. Lindsay.

This standardization of materials does not limit the number or variety of body sizes that may be built. It is possible to build a body within one-half inch of any desired size because standard Lindsay Structure panels are available in widths from 5 inches to 41 inches by inches and in lengths from 17 inches to 143 inches by inches. Panels sheets in fractional dimensions, such as 29½ inches by 77¼ inches are also available but at increased cost.

The machine that forms the edges of the Lindsay Structure panels is capable of manufacturing some 4000 different sheet sizes and shapes, all of which are standard. The company also has made available three types of corners for bodies. The "M" type corner has a radius of 1½ inches. The two cove type corners have radii of 6 inches and 8½ inches.

All Lindsay Structure materials have been designed for quick, easy assembly. During assembly tests at the Dry-Zero plant two skilled men have put together a 12-foot truck-body, exclusive of floors and doors, in less than half a day. The simplicity of Lindsay Structure assembly and the fact that all parts are standard makes maintenance and repair work economical. Damaged panels and framing can be replaced easily and quickly from outside.

No special tools or shop equipment are required for assembling Lindsay Structure materials into truck bodies. Speed wrenches of various kinds may be employed for accelerating assembly of the body framework. The small socket wrench used for attaching the panels is supplied.

An Idea That May Gain a Wide Application

Editor's Note: While the new Lindsay Structure material has been designed principally for truck bodies, it has been used for such items as portable cold storage rooms and refrigerated shipping containers, as well as for small industrial buildings. The manufacturer also believes that the material may be applicable to the manufacture of some of the containers, walk-in coolers, and storage boxes being built by refrigerator manufacturers.

At the same time the manufacturer emphasizes that he is producing and selling only a material and not, for example, a knock-down walk-in cooler.

Basic Elements

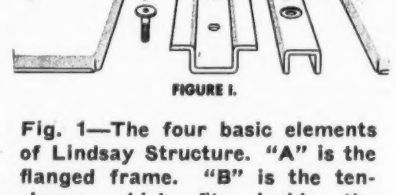


FIGURE I.

Fig. 1—The four basic elements of Lindsay Structure. "A" is the flanged frame. "B" is the tensioner which fits inside the channel of the flanged frame. "C" and "C" are two panel sheets with patented edges which fit into the flanged frame. "D" is the patented socket lock screw which draws the tensioner into the channel of the flanged frame.

Before Tightening

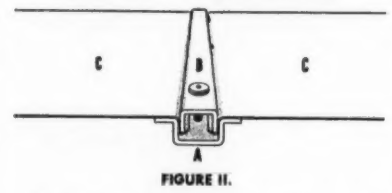


FIGURE II.

Fig. 2—The four basic elements in place before the union is tightened. The edges of the panel sheets have been placed in position in the flanged frame (A). The tensioner (B) has been applied over the edges of the sheet. The socket lock screw has not yet been screwed down.

Completed

FIGURE III.

Fig. 3—The completed union between frame and sheets. The socket lock screw has been turned home, pulling the tensioner (B) into the flanged frame (A). The curved edges of the sheets have been pulled downward by the edges of the tensioner, drawing the sheets taut. The edges of the tensioner are bedded against the sheets and the bottom of the channel of the flanged frame. This assembly is continuous around all edges of each sheet.

Hefty Sales Installs a System For the 'Flame'

MADISON, Wis.—Hefty Sales Co. has installed Frigidaire refrigeration and air conditioning in the Flame, Madison's new restaurant.

Electrical Testing Lab In New Quarters

NEW YORK CITY—New home of the Electrical Testing Laboratories at East End Avenue at 79th St. is described in a special bulletin issued by E.T.L.

The new quarters are in an eight-story building, which has been completely remodeled and renovated and fireproofed. E.T.L.'s quarters include the basement and first five floors, a total of 70,000 square feet of floor space.

Pictured in the bulletin are floor plans for the various floors, and pictures of the testing equipment on each floor. It is on the fourth floor that refrigeration and air-conditioning products will be investigated, and some of the laboratory facilities pictured include a test kitchen for electrical appliances, humidity leakage, and humidity endurance rooms, and an air-conditioned two-room cottage for investigation of household equipment.

Kerotest Introduces New Packless Valve

PITTSBURGH—A new design in diaphragm packless valves which is said to improve greatly the operation of valves and to eliminate many possible sources of troubles over long period of use is being introduced by Kerotest Mfg. Co. this year.

Kerotest engineers have designed into the Kerotest standard line of valves a raised body seat and flat spindle seat construction, this spindle seat being replaceable and being of a composition material impervious to all refrigerants.

This combination of a raised body seat and flat spindle seat means easier valve operation and is said to bring about more perfect operation of the valve.

Giant Press Built For Frigidaire Factory

DAYTON, Ohio—A giant 150,000-pound embossing press capable of exerting a pressure of 1,200 tons at the bottom of its stroke has been built for the Frigidaire factory here by Minster Machine Co., Minster, Ohio.

After being constructed according to specifications of Frigidaire engineers, the huge machine had to be dismantled and shipped to Dayton in sections.

Where Air-Conditioning Systems Were Installed In Kansas City In 1938

Name and Address	Equipment and Installer	Tons	Hp.
Banks			
Columbia National Bank, Tenth & Grand	Carrier (B-D-R)	¾	¾
First National Bank, Tenth & Baltimore	G-E (U. S. Engr.)	40	45
Linwood State Bank, 31st & Troost	Lipman (Gen. Ref. Sales)	10	11
Stock Yards Bank, 1601 Genesee	Westinghouse (Natkin & Co.)	15	17¾
Union National Bank, 915 Walnut	Airtemp (Flarsheim)	3	3⅓
Barber & Beauty Shop			
Rockhill Beauty Shop, 325 E. Gregory	Norge (Moser & Keller)	3	3
Buildings			
Brookside Theater Bldg., 63rd & Wyandotte	Westinghouse (Natkin & Co.)	30	37½
Jenkins Music Co., 1217 Walnut	Williams (U. S. Engr.)	120	52
W. D. Investment Co., 6328 Wyandotte	Frigidaire (Carter-Waters)	25	22
Drug Stores			
Parkview Drug Store, 3501 Broadway	Kelvinator (Rich Con.)	15	18½
Parkview Drug Store, 6301 Brookside	Kelvinator (Rich Con.)	10	13
Karnes Drug, 222 E. Armour		½	½
General Offices			
Atlas Beverage, 2018 Baltimore	Baker (Baker)	3	4
Barada & Page, 2000 Guinotte		3	3
Barrick Pub. Co., Second & Delaware	Carbondale (Dean-Hagney)	15	16½
Central Surety & Ins., 1737 McGee	Carbondale (Dean-Hagney)	50	66½
Commonwealth Amuse. Co., 213 W. 18th St.	Vilter (Vilter)	23	26
Continental Grain, 710 Bd. of Trade	Frigidaire (Carter-Waters)	5	5½
Dart Truck Co., 2648 Oak St.	Kelvinator (Rich Con.)	3	3¼
Davis Paint Co., 14th & Iron NKC		3	3½
Dept. of Air Commerce, Bryant Bldg.	Westinghouse (Natkin & Co.)	3¾	4
Drs. Dixon & Dively, Professional Bldg.	Carbondale (Dean-Hagney)	7	8¼
Donnelly Garment Co., 1828 Walnut	Carrier (B-D-R)	3	3¼
Exhibitor's Film Exch., 1714 Wyandotte	Kelvinator (Rich Con.)	3	3¼
Faeth Co., 1729 W. Eighth St.	Carrier (B-D-R)	10	11
Faultless Starch Co., 1025 W. Eighth St.	York (U. S. Engr.)	5	5
Folger Coffee Co., Eighth & Broadway	Carrier (B-D-R)	50	50
Hilliard Motor Co., 3912 Prospect	Kelvinator (Rich Con.)	3	3¼
Hills Bros. Coffee Co., 1104 Union	Carrier (B-D-R)	6	6½
Jackson Democratic Club, 1908 Main	Westinghouse (Natkin & Co.)	7½	8¼
K. C. Power & Light, 14th & Baltimore	Airtemp (Flarsheim)	3	3⅓
Eli Lilly Co., 817 Broadway	York (York)	10	13
Manor Baking Co., 4050 Penn	G-E (Gen. Air C. Corp.)	30	30
Dr. Marty, 815 McGee		3	3⅓
Milgram Food Stores, 2519 Madison	Airtemp (Flarsheim)	10	12¾
Missouri Portland Cement, Bryant Bldg.	Airtemp (Flarsheim)	3	3⅓
Northeast Ice Cream Co., 4627 Indep.	Baker (Baker)	3	4
J. B. Osgood Coffee Co., 1727 McGee	Airtemp (Flarsheim)	3	3⅓
Real Estate Board, 909 Baltimore	Frigidaire (Carter-Waters)	3	3⅓
Rudy-Patrick Seed Co., 817 Santa Fe	Westinghouse (Natkin & Co.)	15	13
Rust Sash & Door, 962 Hickory	Carbondale (Dean-Hagney)	5	5¾
Safety Federal S. & L. Co., 908 Grand	Carbondale (Dean-Hagney)	15	20½
Seavey & Flarsheim, 515 BMA Bldg.	Airtemp (Flarsheim)	11	12
Sheffield Steel, Sheffield Sta.	Frigidaire (Carter-Waters)	9	10
Sheffield Steel, Sheffield Sta.	Frigidaire (Carter-Waters)	30	25
Union Finance Co., 15 & Oak Sts.	Lipman (Gen. Ref. Sales)	10	11
Hospitals			
Menorah, 4949 Rockhill	Airtemp (Flarsheim)	5	5½
St. Luke's, 44 & Mill Creek	Carrier (B-D-R)	1½	1½
Hotel			
Rob't E. Lee, 13th & Wyandotte	Carbondale (Dean-Hagney)	3	3¼
Industrial & Miscellaneous			
Argyle, 2508 E. 115th St.		10	11
Biltmore Club, 3032 Main St.	Frigidaire (Carter-Waters)	17	16½
Crooks Terminal Whse., 1207 Union	(Flarsheim)	20	26
D. & S. Club, 17½ W. 12th St.	Baker (Baker)	20	20
K.C.M.O., Commerce Bldg.	Airtemp (Flarsheim)	1	1
K.M.B.C., Pickwick Bldg.	York (York)	7½	9½
Harry McCarthy, 806 E. 31st St.	F-M (Fairbanks-Morse)	15	16
Miller's Recreation, 121½ E. 12th St.	Frigidaire (Carter-Waters)	12	12
Mo. Portland Cement, Cement City	Frigidaire (Carter-Waters)	5	5½
Muehlebach Brewery, 316 Oak St.	Baker (Baker)	10	11½
Mortuary			
Freeman Mortuary, 100 W. 42nd St.	Baker (Baker)	7½	7½
Restaurants & Night Clubs			
Frank Badami, 1016 E. 31st St.	G-E (Elec. Appli. Ser.)	3	3¼
Carl Carramusa, 3223 Troost		10	10½
Gehr's Cafe, 2606 E. 15th St.	Copeland (Copeland)	10	12½
Gordon & Craig, 123 W. 12th St.	Copeland (Copeland)	2	2
Hollywood Systems, 3433 Broadway	Kelvinator (Rich Con.)	3	3⅓
Emile L. Martin, 119 W. 12th St.		7½	9½
Sno-Freeze, 3820 Main		5	5½
Speyers Grille (added), 1923 Grand	Carbondale (Natkin)	2	3
Tempter Sandwich Shop, 113 E. 11th St.	Lipman (Gen. Ref. Sales)	10	11
Thompson's, 15 W. 12th St.	Lipman (Gen. Ref. Sales)	25	28¾
Thrifty Lunch, 1025 E. 12th St.	Copeland (Copeland)	1½	1½
Troostwood Delicatessen, 5504 Troost	Copeland (Copeland)	3	3⅓
Sales Rooms & Shops			
Adler's, 1210 Main	Westinghouse (Natkin & Co.)	50	60½
Buehler Bros. Market, 3947 Main	Kelvinator (Rich. Con.)	4	5½
Cricket West Shop, 108 W. 47th St.	Westinghouse (Natkin & Co.)	7½	8½
Emery-Bird-Thayer, 11th & Walnut	Westinghouse (Natkin & Co.)	1	1
C. A. Flarsheim, Inc., 201 W. Pershing	Airtemp (Flarsheim)	8	8⅞
Frigidaire Sales Corp., 2619 McGee	Frigidaire (Frigidaire)	5	5½
Gate City Optical Co., 1114 Grand	Westinghouse (Natkin & Co.)	2	2⅜
Helzberg's Diamond Shop, 11th & Walnut	Westinghouse (Natkin & Co.)	15	17
Jones Store Co., 12th & Main	Vilter (Vilter)	27	28
K. C. Power & Light Co., Overload Park	G-E (Gen. A. C. Corp.)	25	27
Kessel Dress Shop, 921 Main	Westinghouse (Natkin & Co.)	10	12
Mindlin's Plaza Shop, 205 W. 47th St.	Westinghouse (Natkin & Co.)	10	11½
National Shirt Shop, 1112 Main St.	Frigidaire (Carter-Waters)	3	3¼
Jane Nichols Dress Shop, 200 W. 47th St.	Westinghouse (Natkin & Co.)	7½	9½
Palace Clothing Co., 12th & Grand	Westinghouse (Natkin & Co.)	7½	7½

18 N. J. Utility Workers Enrolled In Course

NEWARK, N. J.—Eighteen employes of Public Service Corp. of New Jersey and its affiliated companies are enrolled in the "Heating and Air Conditioning" course which the company's educational department instituted last fall. One employe is even taking the course on a correspondence basis.

H. Preston Morehouse, the company's general air-conditioning representative, is serving as instructor. Classes are held in the Newark Terminal building.

Air Conditioning Utilities Moves To New Offices

BOSTON—Air Conditioning Utilities Co. has moved its office here from 110 Arlington St. to larger premises at 436 Statler building, the company announces.

New York City and Boston activities are under the direction of Harry W. Fiedler, factory representative for Julien P. Friez & Sons, Baltimore.

Delaware Show Planned For March 9-11

WILMINGTON, Del.—The spring refrigeration and electrical show of the Electrical Trades Association will be held in the Hotel DuPont here March 9, 10, and 11, reports the chairman of the show committee, John S. Reburn.

Kansas City 1938 Installations (Cont.)

Sales Rooms & Shops (Cont.)

Name and Address	Equipment and Installer	Tons	Hp.
Palace Clothing Co., 12th & Grand	Airtemp (Flarsheim)	3	3½
Regal Shoe Store, 1006 Walnut	Carrier (B-D-R)	5	5½
Richman Clothing Co., 1025 Main	Westinghouse (Natkin & Co.	15	17
Rothschilds, Tenth & Main Sts.	Vilter (Vilter)	125	176
Bennett Schneider, 232 Alameda Rd.	Airtemp (Flarsheim)	3	3⅓
Seiden Fur Co., 935 Broadway		3	3¾
David E. Swan, 3046 Main	Norge	3	3⅓
Van Dyke Fur Co., 1105 McGee	Westinghouse (Natkin & Co.)	2	5¼
Fred Wolferman, Inc., Armour & Main	York (York)	25	28

Private Offices

Manufacturer	No. Installations	Tonnage	Hp.
Airtemp	5	4½	5
Carrier	3	2¼	2¼
Copeland	3	5	5¼
Frigidaire	3	2¼	2¼
General Electric	4	5	5
Ilg	1	½	½
Kelvinator	5	5	5⅓
Norge	1	½	½
York	4	3	3
Unknown	1	2	2

Residences

Manufacturer	No. Installations	Tonnage	Hp.
Airtemp	4	3½	3¾
Carbondale	3	19	23¾
Carrier	13	10½	10½
Frigidaire	4	3½	3¾
General Electric	2	6½	7
Ilg	3	1½	1½
Kelvinator	16	10⅓	10⅓
Lipman	2	9½	10⅞
Norge	2	1¾	1¾
Westinghouse	5	14½	19⅓
York	6	19½	23½

Commercial Service

How Control Valves Are Used In Three Circuits of Russ 1936 Fountains

Valves controlling the three refrigeration circuits in the 1936 Russ soda fountains are described in this article because this system is somewhat different from the usual fountain. This is a continuation of the series by Arch Black and Dean C. Seitz on servicing of soda fountains, ice cream counter freezers, and frozen foods cabinets which is appearing in the NEWS.

By Arch Black and Dean C. Seitz

In Fig. 3 of last week's article, the refrigeration hook-up of the 1936 Russ fountain was illustrated. Since this hook-up is somewhat different than the usual one encountered in the field of soda fountain service, it will be necessary to briefly discuss the operation of each of the control valves used in the three refrigeration circuits.

Thermostatic Expansion Valve

Three standard adjustable thermostatic expansion valves are supplied with each creamer unit as standard equipment. The first valve labeled (X1) is used on the ice cream refrigeration circuit. The second, labeled (X2), is used on the water cooling refrigeration circuit, and the third, labeled (X3), is used on the jar enclosure refrigeration circuit.

Since the operation of these valves is no different than the standard application of adjustable standard thermostatic valves, no discussion should be necessary of the theory of their operation. At a later point, the proper settings for these valves will be given in detail.

Solenoid Valves

Two solenoid valves are supplied as standard equipment on the Russ dry-expansion soda fountain (1936 model). One of these valves is installed in the suction line leading from the ice cream refrigeration coil, and the other is in the suction line leading from the water cooling refrigeration coil. Fig. 1 illustrates a cross section through a typical solenoid valve.

The solenoid valves perform the function of a snap-action suction line shut-off valve. It must be controlled by a thermostat or cold control. As is seen from Fig. 1, the solenoid consists of a body and a long stemmed valve. The long stem of the valve extends into the sealed tube around which a magnetic coil is installed.

It is most important that the coil itself be carefully water proofed to prevent the possibility of condensation forming a short in the magnetic circuit. Any replacement coils for the solenoid valve should be obtained directly from the manufacturer of the soda fountain as they have had specially water proofed coils designed for this particular application.

In operation, if the cold control permits current to pass through the magnetic coil of the solenoid valve, the valve stem is lifted due to the magnetic effect of the coil, thereby holding the valve stem in the open position.

As long as the valve is open, the condensing unit can draw gas from the refrigeration circuit on which the solenoid valve is installed. As quickly as the temperature of the thermal bulb of the cold control has been reduced to the desired temperature, the cold control electric switch breaks the circuit, stopping the current from passing through the solenoid valve. As quickly as the electric current no longer passes through the solenoid valve, the coil no longer acts as a magnet, and the valve drops because of its own weight.

The valve will remain in a closed or shut position until current again passes through the valve, at which time the above cycle will again repeat. Each solenoid valve, together with its own thermostatic cold control, forms its own little independent electrical circuit.

Since the magnetic coil used in a solenoid valve varies with each different type of electric current, it is necessary for the service engineer in ordering any replacement coils to specify the proper voltage and cycle.

The strength of the magnetic coil which operates the solenoid valve is only sufficient to open the valve when the difference in pressure between the inlet and the outlet of the valve is less than 50 lbs. per square inch.

Opening Point

This opening point is most important to the service engineer. Particularly at the time of installation, it is very possible to obtain greater pressure differentials than 50 lbs., if the condensing unit is allowed to start before the electric circuit of the solenoid valve has been connected.

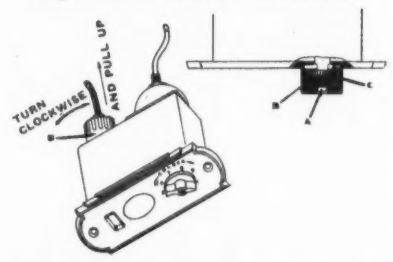
For example, at the time of installation, the gas in the ice cream refrigeration coil is approximately at room temperature, and therefore at a pressure of approximately 70 lbs. If the condensing unit is allowed to operate without making the electrical connections to the solenoid valves, the pressure on the outlet side of the solenoid valve may be reduced to zero pounds or less.

Under these conditions, the solenoid valve would never open, even after the electric connection to it had been made. To equalize the pressures on the inlet and outlet sides of the solenoid valve so that it will open, it is recommended that the installation engineer place a ¼-inch copper lined jumper between the head-pressure gauge connection on the condensing unit, and the crankcase gauge connections on the condensing unit.

By allowing a small amount of the high-pressure gas to enter the crankcase and suction line of the system, the pressure in the suction line (which is the outlet pressure of the solenoid valve) can be raised so that the differential between the inlet and the outlet sides of the valve will be less than 50 lbs.

Under unusual operating conditions this same condition may be encountered. It is always accompanied by a buzzing noise in the valve which indicates that the valve is trying to open, but is unable to do so.

Fig. 2—Cold Control



Two of these cold controls are used in the 1936 Russ fountain.

Cold Control For Solenoid Valve

As was pointed out in a previous paragraph a thermostat or cold control is necessary to start or stop the electric current passing through the solenoid valve. Since the amount of current passing through the valve is extremely small, it is unnecessary to use a large or expensive thermostat in order to control this current.

Fig. 2 illustrates the cold control used with the Russ 1936 fountain. Two of these controls are supplied as standard equipment. The first one controls the operation of the ice cream solenoid valve (S1) and the second controls the operation of the water cooling solenoid valve (S2).

In operation, as the thermal bulb of the cold control gradually becomes warmer, an electrical contact is made. This contact permits current to pass through both the cold control switch and the solenoid valve. The current magnetizes the solenoid valve causing it to open and when the solenoid valve opens, the condensing unit will cut-in and refrigeration will be produced in the coil.

As soon as the thermal bulb of the cold control has been cooled to a predetermined setting, the electric current is broken. This break demagnetizes the solenoid valve, causing it to close. With the suction line closed, no further refrigeration will take place in the coil controlled by that particular solenoid. This process continuously repeats, controlled only by the temperature of the thermal bulb of the cold control.

The cold controls are adjusted by means of a small indicator dial (B) shown in Fig. 2. With the indicator dial pointing to No. 5 position, the temperature setting is approximately in the middle of its adjustment. With this setting, the ice cream will be properly preserved for the average customer. The water cooling control should be adjusted between points 2 and 3, for the average water cooling demand.

Heat Interchanger

The heat interchanger shown in Fig. 3 of last week's article, labeled (H1), consists of a length of ¼-inch liquid line coiled inside an enlarged section of the suction line. The heat interchanger is mounted in the same compartment as the thermostatic expansion valve.

When the thermostatic expansion valve controlling the ice cream refrigeration circuit is properly adjusted, cold frost will form on the surface of the heat interchanger while the condensing unit is in operation, but will not extend any further along the suction line.

The purpose of the heat interchanger is to eliminate as much flash gas as possible in the ice cream refrigeration circuit, and at the same time reduce to a minimum the amount of frost or condensate which might form in the suction line. The frosting and melting of moisture on the suction line is very objectionable on soda fountain installations for it always melts during the off-cycle, running on the floor and possibly rotting the linoleum or other floor covering.

Check Valve

A check valve is installed in the suction line leading from the ice cream refrigeration coil. It is illustrated in Fig. 3 of the previous article, and labeled (CV). The purpose of the check valve is to prevent refrigerant gas from the warmer circuits, that is the water cooling and jar enclosure circuits, from condensing in the colder ice cream refrigeration coil.

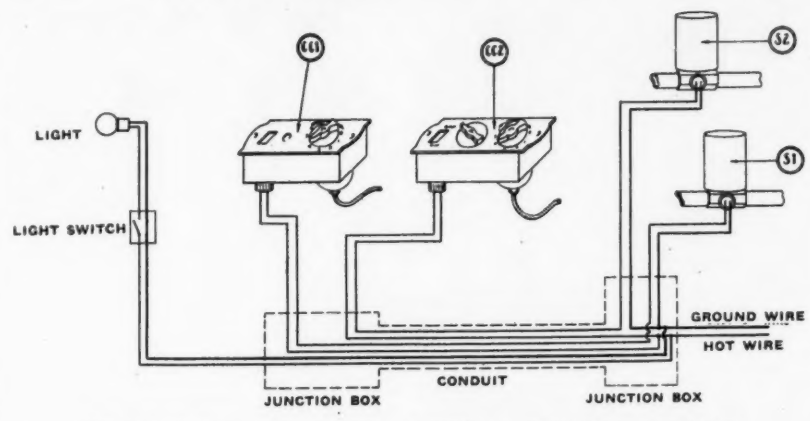
If the check valve were not installed, an appreciable amount of refrigerant vapor from the two warmer refrigeration circuits would condense in the refrigerant tubing of the ice cream circuit. This would add an additional amount of refrigerant liquid to the ice cream refrigerant coil over and above the amount supplied by the thermostatic expansion valve. Under these conditions, the results would be erratic frosting of the suction line leading from the ice cream refrigeration coil.

Wiring Diagram

Fig. 3 illustrates the wiring diagram for the electric circuit connecting the two cold controls, the two solenoid valves, and the electric light switch installed in the bottle storage compartment.

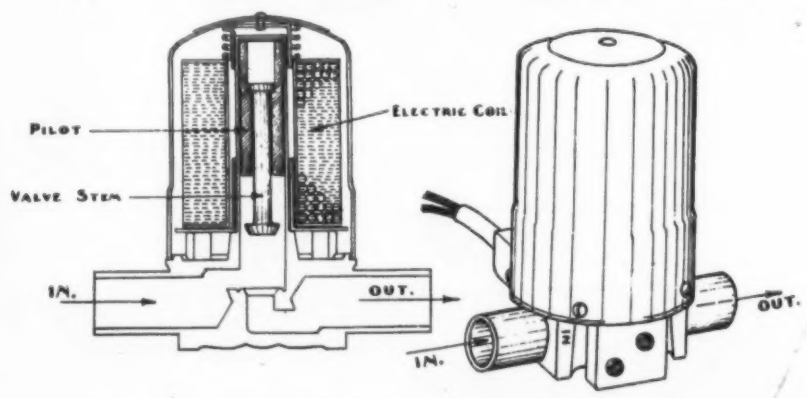
All of this wiring is connected in conduit by the manufacturer before shipment. It is brought to a junction box which is located on the end of the creamer unit. At the time of the original installation of one of these models, it is necessary to make certain that the voltage and cycle of the current available correspond to the specifications found on the name plate of the solenoid valve.

Fig. 3—Wiring Diagram For 1936 Russ Fountain



Wiring diagram for electric circuit in 1936 Russ fountain.

Fig. 1—Cross Section of Solenoid Valve



Typical solenoid snap-action suction line shut-off valve.

Service Methods

Methods of Making a Proper Bond With Hard Drawn Refrigerant Lines & of Getting a Correct Refrigerant Charge

By E. G. Haight, Assistant Service Manager, Universal Cooler Corp.

With the development of large condensing units and large evaporators, the use of soft tubing presented several problems. It was difficult to make a flare joint that would be gas tight. Another problem was bending without making kinks.

It was also difficult to make long runs of tubing straight so that a neat workmanlike job was produced. Hard drawn copper tubing and the use of sweat fittings have eliminated these difficulties. Its use has been so successful that it has been adopted on a large number of smaller unit installations.

The subject of making hard solder connections has been covered a number of times, however, there are a few salient factors that are important and with which the workman must be entirely familiar if the installation is to be successful.

The bond of tube to fitting is accomplished by the law of capillary attraction. To obtain capillary action the dimension of the tube and the fitting must be held at very close limits. A few thousandths of an inch is all that is permitted for capillary action to take place in these fittings. If the space is too large, the solder will not flow into the joint but will drop off the bottom of the tube.

Occasionally tube ends become dented or damaged in handling. In such cases, it is best to saw off the tube beyond the dented or damaged section.

It is possible to make perfect joints, even though it is necessary for the solder to run uphill, if the capillary space is uniform. This cannot be accomplished with tubing that is out of round or damaged.

Use care in cleaning the portion of the tube that is to be sweated to the fitting, and the inside of the fitting. These surfaces should be highly polished. Steel wool is recommended for this purpose. Coarse sand papers and emery cloth are apt to score the metal surfaces if used vigorously.

Fluxes are used to remove oxides since solder will not adhere to an oxidized surface. See that it is spread evenly over the outside of the tube and the inside of the fitting. In extremely cold weather, warm the fitting and the tube slightly with the torch, so that the flux may be distributed evenly.

Permit the soldered connection to cool so that the solder is well set before any strain or stress is placed on the joint. This is especially important in the large size suction line connections. These heavier fittings hold the heat longer and do not cool as rapidly as smaller fittings. Special attention must also be given in the heating of these larger fittings as it is possible to overheat the tube before the fitting approaches the proper soldering temperature.

The refrigerant lines between the unit and the evaporator must be almost "surgically clean" before the system is put into operation. Even though it is possible to purchase lengths of hard drawn tubing with the ends capped, it is essential that the lines be cleaned at the time of erection due to the installation methods necessary.

A clean cloth saturated with anhydrous methyl alcohol and drawn through the tubing by means of a wire will remove all dirt, filings, and residue that might accrue during the installation process. Repeat the above operation with a clean dry cloth that does not give off lint.

It is preferable to clean the entire lines at once, but if length and connections interfere, clean the lines in sections. This cleaning process will be easier if all loose residue is removed before the length is placed in its permanent location.

Proper Refrigerant Charge

The amount of refrigerant shipped with the smaller condensing units is generally adequate for the majority of normal installations. Larger sizes of units are usually shipped with only a nominal holding charge of a few pounds. Such quantities as are shipped with the unit are generally agreed upon by the refrigeration industry as a standard shipping charge.

The quantity of refrigerant necessary to properly charge one of these larger systems, or a smaller one having unusually long runs of tubing, must be calculated. Copper tube manufacturers and their distributors can generally furnish data on the volume of any size tube.

Figure the liquid receiver about one fourth full, the liquid line completely filled from the liquid receiver to the expansion valve, and the suction line full of gas. The density of liquid refrigerant can be obtained from a thermodynamic chart.

Temperatures will affect the density some, but in general figure liquid at 86° F. The following values will be comparatively accurate.

Refrigerant	Liquid at 86° F. Lbs./Cu. Ft.	Vapor at 40° F. Lbs./Cu. Ft.
Freon	80	1.26
Methyl Chloride	56	.77
Sulphur Dioxide	85	.35

The above values for vapor density are taken at 40° F. The vaporizing pressure at which the unit will operate should be the determining factor in arriving at the weight of refrigerant in the vapor state.

The type of evaporator must also be considered in determining the total quantity to be added. The specifications and recommendations of coil manufacturer should be consulted in order to be accurate.

Veteran Contractor Sees 'Commercial' As Best Bet

POPLAR BLUFF, Mo. — "Sealed hermetic units spell the end of household refrigeration service as a profitable business," declares A. A. Hicks, of the Hicks Refrigeration Service Co. of this city.

"We are becoming more dependent on commercial refrigeration business every year," Mr. Hicks says, "and now that air conditioning is coming along, we expect that to increase our volume of business."

According to Mr. Hicks, it is difficult to justify prices necessary in furnishing good domestic service in the mind of the owner. Doing work on a household refrigerator does not always pay out as well as it should, for this reason.

Following experience in St. Louis with the Gardener Smith Co., Frigidaire dealer, Mr. Hicks started his own business here in 1930. Since that time he has been building up his business by doing service work through the hot weather, and devoting the slack months to the sale of Delco-light systems for farms, and electric water pumping systems.

"There is more than we can do in summer," Mr. Hicks said, "but to make our business successful it must be rounded out with equipment sales.

"While the 500-mile rural electrification project now under way in our district will destroy the market for Delco-light plants, we believe it will open up a great opportunity for the sale of water pumping systems and other appliances."

Mr. Hicks has recently opened a new store which will serve as a display room for the products sold and as headquarters for the service business. His present plan includes taking on lines of household refrigerators, commercial refrigerators, and other appliances.

At present the Hicks company is handling service work for the Mills Novelty Co., Kelvinator, Hussmann-Ligonier Co., and National Refrigerators Co. Looking after the equipment for these concerns while it is in warranty establishes contact with the owner which leads to service business later, Mr. Hicks asserts.

Mr. Hicks does plumbing and house wiring, in addition to his refrigeration service business. He also handles Mills condensing units, National refrigerators, and Delco radios.

After talking with exhibitors at the recent All-Industry Refrigeration and Air Conditioning Exhibition at Chicago, Hr. Hicks has become interested in taking on a line of air-conditioning equipment.

N. Y. Servicemen Debate Controls

NEW YORK CITY—A heated general discussion on problems of cooling control followed the talk on refrigeration control application which August Ulbert of Alco Valve Co. delivered at a service meeting sponsored last week by R. G. Gourley, service manager of Quinn Engineering Co., Carrier distributor here. Mr. Ulbert also demonstrated the Alco glass evaporator.

Announced as an open meeting, the affair was attended by more than 50 members of the local service trade.

15 Service Engineers Attend Mills School

CHICAGO—Latest in the series of service schools held for refrigeration service men by Mills Novelty Co. was conducted here recently for 51 service engineers. In a specially equipped school room, the service men were instructed in the construction and principles of design and operation of the Mills counter-type ice cream freezer.

On a tour of Mills plant No. 3, the men were shown the machining processes of the condensing unit assembly, and the ice cream freezer and bottle dispensing equipment, and also were shown highlights of the workings of all departments.

A demonstration of how to conduct a demonstration for a prospect or customer was presented. Following this, three ice cream freezers on the platform of the "school room" were placed at the disposal of the engineers, to let them find out for themselves "what makes them tick."

Des Moines Group Addressed By Jones

DES MOINES, Iowa — Austin Jones, manufacturers' representative of Omaha, Neb., was guest speaker at the January meeting of the Des Moines chapter of Refrigeration Service Engineers' Society, held in the Savoy hotel here last month. Twenty-eight members were present.

Door prize for the meeting was furnished through courtesy of the M. W. Dunton Co., Providence, R. I.

40 Service Companies In Brooklyn Form 'Guild'

BROOKLYN — Refrigeration and Air Conditioning Guild, Inc. has been organized here and chartered with a membership of 40 refrigeration and air-conditioning service firms for the stated purpose of correcting what is termed by the guild as the "abuse of over-charging without receiving any satisfaction in the matter of refrigeration repairs."

According to William F. Despagna, guild secretary, every member employe will carry a membership card for identification purposes.

In addition to Mr. Despagna, officers of the association are:

President, Joseph A. Dorsey, Dorsey General Appliance; executive vice president, Theodore Reina, M. & R. Refrigeration Co.; treasurer, Nathan Meister, Frozen Air Maintenance; sergeant-at-arms, J. Ulrich, National Refrigeration.

Regional vice presidents: Brooklyn, I. Hutter, Bedford Refrigeration; Queens, G. T. Lilley, A & A Electric Appliance; Manhattan, T. E. O'Donahue, T. E. O'Donahue; Bronx, H. Zysman, Landlord's Refrigeration; Nassau, S. Molinari, S. Molinari.

Board of directors: Brooklyn, George Ewing, Auton & Ewing; Queens, E. Condon, Flushing Refrigeration; Manhattan, R. C. Jones, R. C. Jones; S. Speilman, Acme Refrigeration.

Electric Supplies Opens Branch Warehouse

EL CENTRO, Calif.—Electric Supplies Distributing Co., wholesale distributor of Westinghouse refrigerators, ranges, and other appliances with headquarters in San Diego, has opened a branch warehouse here, containing 7,500 sq. ft. of floor space.

Milton Taylor will be in charge, and Jack Bates will act as order and stock clerk. In addition to refrigerators, ranges, and radios, a complete stock of wiring supplies, lighting fixtures, etc., will be maintained.

How Refrigeration and Air Conditioning Schools Can Serve the Industry

An Answer to the Criticism of W. S. Schindler In 'Refrigerating Engineering'

By Jardine McKerlie, B.Sc., Managing Director
Industrial Training Systems, Ltd., Toronto, Canada

"AIR CONDITIONING SCHOOLS" as written about by W. S. Schindler in the December, 1938, issue of "Refrigerating Engineering"* portrays a picture of *some* air-conditioning schools and their methods which, unfortunately, is all too realistic. While it is not the intention of this article to controvert many of the highlights in this horrible portrait, I would like to point out that the actual present-day needs of the industry make it essential that a legitimate place be recognized for the more ethical and efficient trade school offering instruction in refrigeration and air conditioning.

From perusal of the article referred to, it is apparent that the author believes that the industry is at present fully equipped with an adequate supply of highly trained university graduates doing even many of the menial tasks which are required by some branches of these industries. This, however, is certainly not true of Canada, as can easily be verified from information available through licensing authorities, especially in certain provinces where those engaged in these industries are required to have a minimum standard of training before they are allowed to practice.

My own investigation into this phase of the trade-school business covered a period of two years and involved the study of some 17 different courses of training in refrigeration and air conditioning offered in the United States and Canada. It also involved correspondence with approximately 7,000 students and graduates of correspondence schools.

This investigation, which is considerably more representative than Mr. Schindler's would appear to be, revealed actual conditions existing in some parts of Canada and the United States.

This survey showed that approximately 65% of all those applying for licenses as mechanics, or to practice as contractors the business of refrigeration installation, service, and sales have been unable to pass the comparatively easy tests required by the governing authorities as a requisite to receiving a license. In most cases of failure, temporary permission, or conditional licenses have been granted rather than restrict the industry or work hardship on the employe.

Assuming for the time being, that the conditions as portrayed by Mr. Schindler are true, this other picture therefore presents to us a very serious problem. How is this two thirds of the present manpower in these industries to be trained? Obviously it cannot be thrown out and replaced. Neither will the industry wait while it goes to a university for four years. Nor are the men who compose this majority in a position to pay for such university training.

Finally, is it not logical that, after taking a higher course of learning, if they did, such men would still have to specialize, just as those who have preceded them into the industry did? I believe it was the Carrier Corp. which took some of the "products" of the college and required 2 to 3 years specialized intensive schooling of them before allowing them to engage in the industry.

It is not my purpose to belittle the advantages of higher education whether academic, scientific, or technical. On the contrary, I believe that everyone would profit immensely from such training, if economic conditions permitted. But that is not possible.

Therefore some more practical system of instruction must be substituted, and some manufacturers, recognizing this, have conducted, as the best means at their disposal, trade schools of their own in both refrigeration and air conditioning. Varying degrees of success or failure, as well as unjustified expense, have resulted.

*Official publication of the American Society of Refrigerating Engineers.

Canadian and U. S. Educators

(Left) Jardine McKerlie, managing director of Industrial Training Systems, Ltd., Toronto, Canada which is affiliated with Industrial Training Corp. and Refrigeration & Air Conditioning Institute, Chicago, of which Ray D. Smith (right) is president.

It may be somewhat startling for the reader to learn, on the basis of the foregoing reports, that 65% of the men actually in these industries at the present time are unfitted, according to legislative requirements, to carry on the work for which they have been engaged. Remember also, that the licensing authority's only interest in this matter is the safety and welfare of the public. The truth of these reports has been attested to by a number of the largest and most vitally interested manufacturers within these industries.

My personal examination of the tests submitted by some of these licensing authorities, has clearly demonstrated to me that they are not in any way onerous to a man who has had any reasonable amount of experience or training. Therefore, I cannot believe that these tests have been designed to restrict the operations of the industries or the men engaged therein.

TRAINING FOR FIELD MEN

One point that Mr. Schindler has not referred to, even admitting the adequacy of trained men in the manufacturing branches of the industry, is the great need of properly trained men in the dealer, contractor, and service organizations which the manufacturers depend upon for their local distribution, field engineering, installation, and service work.

It may be the case that the more adequately trained men in the employ of the manufacturers are university products but their number is relatively small compared to the men in these other organizations. Also, their location at the factory limits their usefulness in the field.

Consequently a great deal of dependence must be placed upon those who work for distributors, dealers, and contractors. The manufacturing plant depends upon these outlets for disposing of its production. These men in the field are the men who require the training, according to the reports already referred to, and also according to definitely expressed opinions of executives of the most important manufacturing companies.

It would seem to me that the industry itself should, therefore, have something to say about this question of trade schools and their relation to the work of the manufacturer, distributor, dealer, and service man. The manufacturer has a very definite problem to face in seeing that men are adequately trained so that his own products will be properly distributed, sold, applied, installed, and serviced. This problem, if the present trend in legislation is indicative of a changing status for skilled men, is going to be solved for the manufacturer, whether he likes it or not, unless he takes steps towards finding a satisfactory solution for himself.

To discuss intelligently just how this problem may be solved for the manufacturer, unless he finds his own solution, requires the reader to think back a number of years, and review briefly some of the things that have been happening in industry generally, during the last 25 years.

There was a time when in almost every phase of industry it was general practice to have a very rigid form of apprenticeship in operation to ensure an adequate and properly trained supply of man-power for the future requirements of any industry. During the World War a shortage of man-power necessitated dropping this type of training. Since then, manufacturers generally, have been reluctant to reassume the same general procedure.

Consequently, there is not at the present time, particularly in the refrigeration and air-conditioning industries, any reasonably well organized form of apprenticeship for young men coming into them. Furthermore, the industry is of such a nature that any reasonably adequate form of apprenticeship would work considerable financial and other responsibility upon the manufacturers, and many of these are not in a position nor willing to assume the burden.

For example, a manufacturer of air-conditioning equipment, may require machinists of various kinds to do part of the work of manufacturing his product, others to assemble the parts in the factory, but only a relatively few men to apply it, because he does not undertake the retail distribution, field application, installation, and service of his equipment. Such work, and this is the work wherein the majority of men are employed in these industries, is the work of the local man—the man who has a small store, or an office and a small workshop, and who employs one or two, or in a very few cases half a dozen men.

TRAINED MEN SCARCE

That man, the local dealer, is not in a position either technically or financially to apprentice a youth and give him adequate instruction during the necessary period of four to five years to equip him, so that at the end of the apprenticeship period properly trained men will be available to the industry.

With the long period of depression now behind us, we are facing a position wherein we find that adequately trained men in many industries, even apart from our own, are scarce. Rehabilitation plans are being developed by government authorities to establish younger men who, perhaps for years, have not done any useful work since leaving school. Pursuit of this worthy ambition on the part of the government is leading them definitely along the lines of instituting apprenticeship plans in industry generally. Some of these already are on the statute books and going into operation just as quickly as the government can organize the means for doing so.

If the refrigeration or air-conditioning industry is brought to the point where these authorities feel that they must insist on apprenticeship, then many of the dealers, service men, and others will be in a difficult position. They will be required to take either one of two choices, neither of which is very

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Adequate Training of Personnel For Conditioning Best Obtained From Schools, McKerlie Says

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acceptable nor offers much inducement to the employer.

The dealer will either have to employ only journeymen or take on one or two apprentices for whom he will only have seasonal work. If he can only give the apprentice seasonal work, it will take the apprentice very much longer to learn his trade. If he is compelled to maintain the apprentice on his payroll, he will be at a considerable financial loss during the periods for which he cannot find useful employment for the young man.

ONLY ALTERNATIVE

Does the industry want an apprenticeship plan? If not, then it would seem that the only alternative would be for the industry to cooperate with the proper type of trade school in furnishing its present man-power and future young blood with the necessary training to qualify for the responsibilities which they are to undertake.

This is not such a radical step, or change in previous procedure, as at first it might seem to the unobserving.

For years now, many of the manufacturers have been operating their own trade schools. Some of them have done so with a great deal of success and others with a great deal of disappointment. All of them have incurred a tremendous expense which, we understand, they are now beginning to feel is not entirely justified. In most cases the expense involved in turning out a properly trained man by this method is very much in excess of that charged by reasonably good and responsible trade schools.

STILL THE NEED

Furthermore, even if an apprenticeship plan is acceptable, there will still be the need for some technical training in addition to the practical tuition given to the apprentice by the employer. Many of us can think in our own lives and remember when we were apprentices, how we were compelled to attend technical school for the fundamental principles of our particular calling. That was all very well and served its purpose admirably when only basic subjects such as mathematics were involved and we were concentrated in technical school areas.

The type of technical training necessary for refrigeration or air-conditioning men, however, is quite different. It involves the knowledge of many sciences and the application and co-relation of them. It is a highly specialized study involving both theory and practice. This is known to most of the discerning manufacturers.

It would therefore appear that even though an apprenticeship plan were in force and acceptable to the industry as a whole, that they would still be lacking in the facilities for technical training adequate to the needs of the industry, for these have not yet been available in many night schools.

RURAL PROBLEM

Futhermore, even if such subjects were available in the larger technical schools, they would be of little or no use to the rural students and for the rural manufacturer, contractor, dealer, and service man. Such apprentices would still have to get their training by some form of correspondence or quit work long enough to take residence training away from home.

And what is wrong with correspondence training after all? Many of the manufacturers have been conducting correspondence schools in one form or another for many years for the benefit of their dealer organizations and their employes. The writer has before him at the moment a series of correspondence lessons prepared by one of the largest manufacturers in the refrigeration and air-conditioning industry in the United States. It consists of six volumes and I understand that something like one hundred thousand dollars were spent by the manufacturer in putting these volumes before his dealers and servicing the instruction. Mr. Schindler would not seem to be in a position, as an investigator, to speak with the mind of the industry. It is perhaps unfortunate for the benefit of the reader that his trade or calling was not mentioned in the title under which his article was published. Any investigator will find what he looks for. While I do not doubt for a moment that he found conditions as portrayed, yet, it is quite conceivable that any number of other investigators looking for other things connected with trade-school practices and methods, and successes would find an entirely different picture.

For instance, I am personally acquainted with several products of the trade schools, all of which are holding responsible positions and giving instruction constantly to many service men under their direction.

It may be that if some correspondence school were to retain Mr. Schindler's services to make an investigation on their behalf he would get a very different picture.

TWO SUCCESSFUL MEN

"The lure of the lesson by mail" may appeal to some men with an inferiority complex as Mr. Schindler says, but it is a fairly safe conclusion to say that Walter Chrysler and Premier Hepburn of Ontario are not particularly men with inferiority complexes. Yet both of these men were largely dependent upon the lesson by mail for the training which led to their present positions of responsibility in the world today. These are not the only men by any means of whom the same thing can be told.

If the industry does need trained men within itself, apart from new blood, then the manufacturer has a just interest in the matter. Why not let the manufacturer then, investigate the existing trade schools, their methods of selling and selecting students and the actual training offered, cooperate with such as he finds to be attempting to do the job along the lines which he himself feels is necessary to his own welfare and to the welfare of the industry at large.

MANUFACTURER'S INTEREST

After all, the product of a separately organized and operated trade school, giving instruction along the lines which the industry requires, to men whom the industry designates is definitely of interest to the manufacturer. The manufacturer would not be sacrificing anything but would have everything to gain by placing his confidence in such an organization, and then seeing to it that the training is given to the man whom he designates, in the manner and to such an extent as he feels is necessary for his purpose.

Much more might be written regarding what Mr. Schindler has to say about the comparison between university students and the products of correspondence courses. The money spent to produce one graduate from the university, competent in refrigeration and air conditioning, as compared with the money spent to produce a similar product through the reliable trade school in cooperation with the industry itself, is much more, and sound economics precludes wasting the difference.

Remember also that in most cases, the university product is subsidized to a considerable extent by the province or state. In other words, the university student does not pay for what he gets. The taxpayer in some form or other, or some donor, has to pay part of it for him.

CAN BE CORRECTED

It is a regrettable circumstance that many students have been inveigled into buying correspondence training when they were entirely unfitted to take or profit by such. It is also deplorable that many trade schools have been allowed to continue to sell a training which is entirely inadequate, even though the student may have been able to absorb the training.

It is also unfortunate that manufacturers' names have been used, and in many cases abused, as being parties in these things. But these are things that are within the power of the manufacturers to correct, if they would do just what has been suggested.

After all, the manufacturer is interested in making things for the refrigeration and air-conditioning industry. The properly organized and operated trade school is interested in making men to serve these industries. Instead of all the controversy that is going on, why is it not reasonable to expect the manufacturer, in his own interest, and in the interest of the man he employs, and in the interest of the good name of the industry, to pick out and select such schools as will cooperate with him in doing the job he wants? The result cannot be anything else but beneficial to the student, the industry, and to the manufacturer.

Fairbanks-Morse 10-Ton Compressor Is An 8-Cylinder Unit

CHICAGO—Latest addition to the air-conditioning line of Fairbanks, Morse & Co. is the 10-ton V-type eight cylinder "Freon" compressor, which J. W. Bostwick, air-conditioning manager, describes as having the highest efficiency per watt input of any unit ever built by the company. The new machine is compact in design, and is counter-balanced for quiet operation under all conditions of service.

In addition to central-station equipment, the company will market a broad line of self-contained equipment this year, including five air-cooled room coolers, ranging in capacity from ½ hp. to 1 hp. and three water-cooled store units in 1-hp., 3-hp., and 5-hp. capacities.

Mr. Bostwick asserts that no changes are contemplated in compressor prices, but says that slight adjustments of dealer prices on self-contained equipment have been contemplated.

Victor Offers Gaskets In Complete Sets

CHICAGO — Refrigeration gaskets in complete sets for popular models of compressors is a new service being offered by Victor Mfg. & Gasket Co.

Complete sets of gaskets needed for overhauling the various compressors on popular models are available in individual packages. Packages are sealed and labeled to show the Victor number for the set, the name of the compressor, the quantity and contents of the package, the application, the manufacturer's replacement part number, and the corresponding Victor number of each gasket.

Sets are known as full sets (FS) and designated by the same number as the cylinder head gasket, and on such compressor units as FS sets are available, they are shown at the beginning of each listing.

Use of the gaskets in complete sets is said to be an aid to both the service man and to the jobber supplying the parts. Gaskets are packaged for protection of the thin stampings by being tied to the false bottom of the package.

For service men desiring to cut their own gasket material, packages of gasket-cutting tools are made in small and large sets. Large set consists of seven punches, ranging in size from 1 to ¼ inches; five blades, two straight and three curved; scriber for outlining patterns; a circle cutter, with two adjustable tools for soft material and two for metal; and a snipper of forged steel. Small set comes without the snips and circle cutter.

Weatherhead Receiver Is Hydrogen-Welded

CLEVELAND—Principal contribution of Weatherhead Co. to 1939's new product parade is a hydrogen-welded receiver tank with the valve welded to the tank.

The valve body, Weatherhead representatives declare, never wears out, so the company saw no reason for not incorporating it into the body of the tank. This still allows for replacement of the valve's insides when, as, and if they become worn or impaired.

A thin, flat compressor valve made of steel rather than brass also is listed by the company as a new product. Because of its steel construction the valve is said to be stronger and lighter, and to have longer-wearing threads.

Huhn Heads St. Louis Service Engineers

ST. LOUIS—A. H. Huhn has been elected president of the St. Louis chapter of Refrigeration Service Engineers' Society, O. E. Petri has been named second vice president, and L. H. Haney, N. H. Behrend, and L. L. Vollman, Jr. (a past president of the organization) have been elected to the board of directors.

Other officers, all re-elected, are: E. C. Fix, first vice president; E. A. Plesskott, secretary-treasurer; Wm. Steinkamp, sergeant-at-arms, and E. Gygax, chairman of the educational committee.

Major Appliances

'Lose Fear of Competition, Maintain Prices, Form an Association', Dealers Are Advised

MADISON, Wis. — Competition, Management, Finances, Selling, Organization, Policy, Advertising, Industry Cooperation—those are the main problems which the appliance dealer meets—and **must meet**—in conducting his business, said Frank W. Greusel, president, Greusel Distributing Corp., in his talk before the annual load building program meeting of the Wisconsin Power & Light Co., held here recently.

Mr. Greusel was speaking on the assigned topic, "The Appliance Merchant and His Problems."

"On the subject of competition," said Mr. Greusel, "many businessmen fear competition. This is wrong because your competitor aids you in creating and educating prospective customers. If you were attempting to do business in a field untouched by competition, you would find a limited volume of business and very expensive to secure.

"Generally speaking, electrical appliances are distributed at retail by department stores—electric and radio shops, usually referred to as a specialty dealer—utilities or power companies—hardware stores—furniture and house furnishings stores, and by a miscellaneous group of merchants who in the smaller towns may handle almost any combination of merchandise items.

"I think the policy of helping good dealers become stronger should extend through and into the credit department of vendors and that loose credit extensions should be curbed in the interest of protecting the better dealers against the unsound practices in the ranks of those dealers who are constantly failing."

"The **department store** is, in my opinion, a constructive competitor because of their cost of doing business and because store policies generally make necessary adhering religiously to prices that show a satisfactory profit.

"There is always, of course, the exception to the rule, and frequently a department store will on one or two occasions throughout the year conduct a special one-day sale when bargains are offered that include nationally known brands of merchandise at attractive prices.

"This temporary advantage can generally be met by other merchants and, in my opinion, no serious consequences result from these merchandising activities. Department stores have the benefit of trained sales people, traffic, advertising, and sometimes on contract sales they are in a position to carry "paper" on terms that other merchants find hard to meet.

"Included with department stores should be the 'national' or 'chain retail stores.' These stores do have a 'cost' advantage. They also have, particularly in the larger towns, well trained sales people. They are in a position to advertise at local rates, private brands that have almost national acceptance. This is real competition but it can be met fairly and squarely by 'appliance merchants,' as I will attempt to point out later.

Says Leadership of Utilities Still Needed

"The merchandising program of **utilities or power companies** operating throughout the state has been developed cooperatively during the past few years to the point where their leadership expands new markets permitting the reduction of selling activities in those localities where an appliance has won general public acceptance.

"In my humble opinion, the leadership of the utility or power company is absolutely necessary to help develop markets for the appliance merchant so that he may profitably secure a share of this business at normal costs. The competitive relation with utilities can easily be placed in the plus column.

Third classification breakdown is **hardware stores,** and here we find a merchant who is improving daily in his ability to retail electrical home appliances. Many reasons contribute to this improvement—national or state hardware dealers' associations are providing continuously educational data on every phase of merchandising, and many old line hardware dealers have awakened to their profit possibilities.

"The hardware dealer is a natural outlet for appliances because he operates on an average overhead of 25% and the discount schedules generally set up at this time prove entirely satisfactory from a profit standpoint.

"I think I would be unfair if I were to leave the impression that all hardware stores are competent 'Appliance Merchants.' This is definitely not true.

Hardware Dealer Should Segregate Appliances

"Many hardware dealers must improve their selling methods considerably before they can successfully compete with the 'national' or 'chain retail store.' It can be done, however, and I recommend to all manufacturers, distributors, their representatives, and to the utilities, that every effort be made to assist the retail hardware merchant to become a better merchant of electrical home appliances.

"I would like to suggest that the larger hardware dealer who has a background of appliance merchandising experience create as soon as possible a separate appliance department, decentralized from the rest of the store items. He should place the department in charge of competent personnel and develop the department to the limit.

"The **furniture and house furnishing retailer** apparently presents a different problem from the hardware dealer and more closely parallels the regular home owned department store inasmuch as their percentage of overhead expense is relatively high. Large floor space, heat, light, elevator power, and trained personnel contribute to this higher cost.

"However, many advantages accrue to this dealer, through traffic, advertising, profit on furniture sufficient to average out other lines. The furniture store has many opportunities to sell completely everything required for the home because this store is frequently the first stop made by new homemakers who buy major electrical appliances along with furniture and house furnishings.

"In many instances, this class of merchant fails to recognize and ap-

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How To Make Conventions 'Intimate'

Distributors from all parts of the country smiled easily and often after they had gone over the 1939 Leonard line and the advertising and promotion materials supporting it at the company's recent series of "miniature conventions" in Detroit.

(1) Ruben Palm of Palm Bros., Minneapolis; A. J. Beauman of Finsterwald's, Detroit; and John Palm, Minneapolis, halt their discussion of finances with G. V. Egan, Nash-Kelvinator assistant secretary and treasurer, to permit him to be decorated by Miss Detroit of 1938.

(2) Encouraging prospects for southern sales are reported to Ray Legg, Leonard general sales manager (center), by B. R. Williamson of Williamson, W. Va., and Lee Stratton, southern district manager.

(3) Norman Macdonald of the eastern district, points out new evaporator and meat compartment features to Distributor Jim Adams of Trenton, N. J.

(4) John and Ruben Palm review some of the sales features of a small-model unit with W. C. Weaver, Jr., Nashville, Tenn.

'If Dealers Are Conscious of Their Costs, They Won't Cut Prices,' Greusel Says

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preciate the value of nationally advertised brands of appliances, and some confusion exists among merchants because of this condition. From a competitive standpoint this situation can be met successfully by competent and aggressive merchants.

"The **miscellaneous** group of merchants, particularly in the smaller towns, represents so many classifications that it is difficult to measure competition. Large and small electrical appliances are handled by automotive parts dealers, druggists, garages, automobile agencies, country general stores, storage battery and service stations, lumber yards and building material dealers, tire stores, jewelers, farm implement dealers, music and piano stores, sporting goods, insurance agencies, gasoline and oil service stations, paint stores, harness shops, novelty stores, oil burner dealers, florists, sewing machine stores, feed stores, and undertakers.

"In view of the large number of manufacturers and the wide distribution at wholesale from mill supply houses, drug jobbers, jewelry and sporting goods jobbers, and hundreds of mail order or catalog concerns all anxious to secure a share of this patronage, it is a situation that cannot be changed and must be met by appliance merchants to the best of their ability. This type of competition is further complicated by various costs of doing business which range from 15% in the case of the country general store to as high as 56% in the case of the undertaker.

Irreducible Items of Dealership Expense

"So much for competition—and we now come to the subject of management. It is plain that management must be competent. Many merchants have sprung from the ranks of mechanics lacking in experience and incompetent to carry on in the face of stronger merchants who have successfully passed through the growing pains and learned their lessons by hard knocks.

"Dun & Bradstreet commercial agency points out that 85% of failures are due to incompetence and lack of finances.

"Even the smallest dealer must realize that he has certain items of irreducible expenses and in relation to his volume of sales he may not have any advantage over his larger competitor.

"This expense is made up of:

Salaries (owners)
Salaries (employes)
Advertising, sales promotions
Insurance (all kinds)
Stationery and office supplies
Heat, light, and power
Telephone and telegraph
Postage expense
Local, state, and federal taxes
Contributions to charity—association dues
Auto and truck expense (delivery)
Rent (although you may own the building)
Social Security Tax—unemployment compensation
Bad debt and collection expense
Depreciation on furniture, equipment, signs, etc.
Merchandise depreciation
Maintenance, painting, cleaning, etc.

"Therefore, management plays an important part, because to succeed your income must exceed your expenses.

"Today more than ever before because of increased federal, state, and local taxation, unemployment insurance, social security tax, voluminous reports to local, state, and federal governmental departments, it is necessary to have adequate finances before engaging in a new enterprise. This is a matter for the individual to decide on and counsel and advice from competent people should be secured. On the other hand, individual initiative and ability may offset completely the disadvantages.

"Selling is perhaps the most important function in the conduct of a successful business. It seems to me that it can all be summed up in a very few words—'Intelligent Selling.'

"Intelligent selling through better product knowledge. Briefly, this means selling at a price that provides the merchant with a satisfactory and adequate profit.

"Too many merchants pay too much attention to volume of sales. Too many merchants go broke doing so. Cut prices, excessive trade-in allowances, discounts for cash, premiums and other inducements bring easier and larger sales volume, but do you want this plus business?

Need Big Increases In Sales To Offset Price Cut

"To offset a 5% price cut with an operating expense of 25% you have to increase your volume 25% additional to break even. A 10% price cut means 67% more volume to break even, and a 12½% price cut means 100% additional volume needed to break even.

"This certainly proves the necessity of selling at a profit. Many successful merchants have learned this lesson during the recent thin years which we have passed through. Less capital, less work, less worry is required if you sell at an adequate profit.

Policy is of great importance in a well balanced business, Mr. Greusel declared. It builds customer satisfaction and establishes goodwill which is one of the greatest assets a growing business can have.

"Earn the reputation of being a one price dealer," he declared. Establish a 'mark up' to show a fair and satisfactory profit and then stick to it religiously. Don't take chances of incurring the illwill of a customer who did not get so good a deal as her neighbor.

"Good dealers improve with experience. Poor dealers—operating on a shoe string—are constantly failing. I feel that vendors should welcome new dealers into the field who are adequately financed and who possess competent personnel, but I think more effort should be directed by manufacturers and distributors to help present dealers become better merchants rather than to create more dealers that tend to confuse because of inexperience.

How Much Should Be Spent For Advertising

Many dealers do not know how much they can afford to spend on advertising, so they approach this most important angle of their business with uncertainty and doubt, Mr. Greusel explained. While some dealers budget their annual operations as accurately as they can, a great percentage do not, and they find themselves over spent and unable to meet all of their obligations promptly.

"It appears sound for a dealer to spend approximately 3% of his annual sales for advertising," the speaker said. "In other words, if he does a volume of $35,000, he should spend approximately $1,000.

"Keep in mind, please, at all times that this recommended advertising committment is based on sound selling and does not allow for any price cutting or excessive trade-in allowances. A heavy percentage of a dealer's total advertising expenditure should be committed during the early months of the year, allowing about one third of the amount remaining for extra effort if an unusual opportunity should present itself.

"Advertising efforts should be well planned, should be regular and consistent and carried on for definite periods, arranged for in advance so as to be flexible enough to either contract or expand depending on current conditions.

'Change' Is Necessary For Effective Displays

"It is also possible to increase your volume at a profit by using other forms of advertising; and one of the cheapest methods yet most effective is window and store displays.

"Effective window display is one of your best and cheapest advertising expenditures. Most manufacturers furnish display material at their exact cost or without cost to you. Colorful, spectacular, impressive moving displays that stop traffic, create desire, and bring customers into the store are your greatest sales building opportunities.

"Change windows weekly, rearrange them frequently, and keep them clean and orderly. Use the same merchandise if necessary, but change cards, backgrounds, and position of appliances. Ask your vendors for window display material. Use it properly and you're bound to secure good results.

"A correct interior display is most important. Arrange your store in such a manner that its attractiveness will hold the attention of your prospect until you can serve him, even though you are unable to take care of him immediately. Neat, clean, colorful backgrounds and display cards should be used freely with appliances. All should be kept immaculately neat and clean.

"If necessary, use the same material you had in this window the week before. Arrange comfortable chairs at points where customers will observe your merchandise displays, also tables with small appliances and leaflets. Do not crowd your floor space, nor pile small appliances unattractively on major items such as ranges, washers, ironers. Nothing repels a customer so much as a store that is carelessly arranged and upset in its appearance.

Kind of Group Activity That Is Desirable

"Industry cooperation can take many forms. The suggestion that I should like to offer has been stated by me several times before at various meetings, but I still think the principle good and if put into practice the entire industry will benefit.

"The suggestion I would like to offer is to take back home with you the thought that group activity has many benefits. By this I do not necessarily mean a completely organized association, which as a rule has as its first objective—price control—and which, incidentally, rarely works but usually disbands amid a scene of wild disorder and difference of opinion.

"By group activity I mean the formation of all members of the trade in some organized manner that will permit of frequent meetings. Of course, some definite program or objective would be desirable, but if you can't build up an interesting program, justify a regular scheduled meeting some way, if nothing more than a pony of beer with pretzels, as the attraction.

"Select a leader from the trade. It might be a man from the utility, or perhaps a dealer would be better qualified to accept the responsibility of heading up the group, and then get together at lunch or dinner and actually get acquainted with each other. Competitors for some reason seem to fear each other. Competition is the blustering bully among words, capable of throwing a scare into men like the blustering bully of school days—and just as harmless when faced.

'Meet Your Competitor— You May Like Him'

"Get acquainted with your competitor—with all of your competitors. The first surprise you will get is that you will find yourself liking him. The next thing that will happen is that you will learn something from him.

"I claim that if you will group together frequently enough, that better understandings will exist, confidence will be born of these new friendships and improved with time. Tolerance will remain where misunderstandings prevailed, and with the simple application of some of the principles of the golden rule, if you are an average person your human emotions will react in the manner that will bring you lasting benefits in your business and business relationship.

"Generally speaking, there is no such thing as 'outsmarting' your competitor, and 99% of the time no one person or firm has any advantage in business over the other. Why not, therefore, secure your reasonable or proper share of the available business at a margain of profit that returns to you just what you are entitled to—with less worry, less work, and more friends and improved relationship throughout the trade.

"Summarizing briefly I would point out:

"First: that the 'appliance merchant' should not allow competition to have an unfavorable influence on his determination to secure his share of the business on a profitable basis.

"Second: resolve that management will capably and efficiently administer all of the details of finances, selling, organization, policy, and advertising so that the merchant may continue to contribute something to society and particularly to the comforts of the American housewife and home life generally.

"Third: cooperate within the industry so that you may gain the personal satisfaction of contributing something that benefits not only yourself but also your competitor.

"Some authority on merchandising once said: 'That I may make a dollar for myself I must also make one for my competitor.' I think this is a true and sound statement, and with the leadership that our state is now enjoying from our sincere and honest governor, let's apply the same human principles to our business that we may help make Wisconsin the greatest state in the Union and our industry the most desirable of all."

Stoker News

Future of Stoker Sales Predicted By Sherman In Analysis of Market

PITTSBURGH—Assuming a 25% fuel saving with the operation of a domestic stoker, the average home owner will save $16 per year through use of a stoker, declared Ralph A. Sherman, speaking before the American Society of Heating & Ventilating Engineers recent convention here.

Mr. Sherman's estimate is based on the use of 8 tons of $8 coal per season. The saving, however, is offset against a net cost of $37.50 per year, which represents a 15% amortization on an investment of $250 for a domestic stoker.

On this basis, Mr. Sherman concludes that the use of a coal stoker costs the average homeowner $21.50 per year net. "Although this premium for improved heating is less, in most localities, than for other fuels, it shows that the market for stokers is governed by the ability of customers to buy. The percentage of the potential customers sold will depend on the merchandising ability of the industry," he said.

WHO CAN BUY

Mr. Sherman's analysis of "potential customers" for the stoker industry now in existence is based on the assumption that "families with incomes of $2,200 or more can afford to pay the $21.50 annual premium for stoker-fired heating."

These families represent 25% of the homes in the country, which may be included in the potential stoker market, he declared. This amounts to 3,670,565 prospects.

"From the total potential market must be deducted those already supplied with automatic heating, leaving a balance of 1,462,225 customers," he continued. "This figure also must be adjusted by deduction of those homes that are in the far west and southwest, where coal is not a competitive fuel, and by an addition on the logical assumption that many of those installations now using oil and gas are prospects for stokers.

"This brief discussion of the market for stokers does not give any conclusive figures, but it does show the method that should be used in each district to determine the sales possibilities.

MARKET NOT LIMITLESS

"It indicates that the market for conversion installations in present homes is not limitless, and may reach saturation within a relatively few years. Stokers that are lower in cost will extend the range of incomes that may be included in the market, and more stokers that are fully automatic will increase their sale in the market that demands this type of operation."

According to Mr. Sherman, stokers should be sized by using the "uniform stoker rating method" adopted last year by the Stoker Manufacturers Association. Boiler and furnace efficiencies used with this formula should be in accordance with standard heating practice.

Speaking of the selection of coal for underfeed bituminous stokers, Mr. Sherman said that "the coking characteristics are of utmost importance. Although practically all coals form more or less coherent masses of coke that make ragged appearing, non-uniform fuel beds, if coking is too strong, certain difficulties may result.

"The principal difficulty is a slow rate of burning and slow response to demands for heat, with, in extreme cases, loss of ignition and extinction of fire.

LOW EXCESS AIR

"The maintenance of a low excess air has been found favorable toward the decrease of difficulties with coke formations, not because this reduces them, but because it favors the maintenance of a strong burning zone and maintains ignition."

Because the removal of ash from a small stoker is as a clinker, the ash must fuse, making temperatures of from 2,400 to 2,800° F. necessary.

Mr. Sherman reports that most producers now supply coal of correct sizes for use in bituminous stokers, with the fines removed. Nearly all stoker coals are treated to eliminate dust in handling. While this process makes the coal higher priced than it would be otherwise, the net results are better, he asserts.

Speaking of automatic air controls used on small stokers, he stated that it had been found, as a result of research, that "four of the five controls tested filled their purpose adequately."

Another method of accomplishing the same result, he said, is with the use of "a manually set damper for the control of air, but the flow is held substantially constant by control of the rate of feeding coal to maintain a constant resistance in the fuel bed."

BIN-FED MODELS

Commenting on the bin-fed bituminous models, he said that "as with anthracite, the bin-feed principle has been well worked out and is successfully used in many installations."

Control devices which govern the operation of a stoker include (1) thermostat in the living quarters to start the stoker directly or through a relay, (2) a device to operate the stoker at such intervals as required, and (3) a limiting device to prevent rates of heat liberation greater than can be transferred to the space to be heated.

Speaking of efficiencies in domestic stoker operation, Mr. Sherman said that "the thermal efficiency of a stoker-boiler or a stoker-furnace is of less importance to the home owner than the degree of attention-free and trouble-free operation."

Stoker Sales Continue To Gain In Dec.

(Concluded from Page 1, Column 4)

compares with 3,029 bituminous and 641 anthracite stokers shipped in December, 1937.

November shipments of these units totaled 5,668 of bituminous type, and 975 of anthracite type.

Factory sales of stokers for small apartment house, flat, and small commercial use amounted to 407 units last December, compared with 381 in December, 1937, and 608 in November, 1938.

Shipments in the residential class in all of 1937 amounted to 87,451 units, closely pressed by the 84,629 units sold in 1938, and well above the 1936 year's mark of 76,376 units. In the small apartment class, the 1938 shipments totaled 5,061 units, as against 6,068 units in 1937.

Shipments for December in the regular apartment house and general small commercial classification amounted to 398 units, against 351 units in the same month of 1937, and 438 units in November of 1937. For the year, shipments in this class totaled 4,328 units, as against 5,002 units in 1937.

As shown in the tabulation for the year by months, July, August, September, and October were the big sales periods.

Manufacturers reporting stoker sales to the Bureau of the Census are said to represent approximately 95% of the total value of the output of the industry, as reported at the Census of Manufacture for 1935.

53 Installations of Stokers Get Chicago Okay In Dec.

CHICAGO—Installation of 53 coal stokers was authorized during December, 1938, by the Chicago department of smoke inspection. A total of 65 permits were issued, of which seven were for oil burners, four for hand-fired boilers, and one for a spreader-type stoker. The permits cover stokers installed in buildings larger than two flats. Installations for residences and two-flat buildings do not require permits.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, $2.00, additional words four cents each. Three consecutive insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

WANTED—A SALESMAN. We seek a salesman who has a brilliant past sales record and knows the channels of distribution for ice cream dispensing and frozen food cabinets. This recent development by an established midwest manufacturer makes a permanent opening with attractive earnings possible through plenty of territory and large commissions. If you believe you measure up, please give details in your reply to Box 1122, Air Conditioning & Refrigeration News.

REPRESENTATIVES WANTED

MANUFACTURER'S REPRESENTATIVE wanted by old established corporation for midwest territory. Product nationally advertised and sold to manufacturers, distributors and dealers. Applicants must be between 28 and 50 and have background of experience in commercial appliances. Straight commission; protected territory. Car needed. Address PELCO, Bloomington, Illinois.

REPRESENTATIVES AVAILABLE

I AM anxious to represent some reliable manufacturer as a factory representative. I am an engineer with 14 years of experience in this field. This time has been spent with two outstanding manufacturers of refrigeration and oil burning. I am thoroughly familiar with the New England and Middle Atlantic territories. May I submit you my qualifications? Box 1120, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

BUSINESS FOR SALE: Thriving, established business with excellent earning record located in prosperous non-industrial mid-western city with 27,000 inhabitants. Top lines of air conditioning, commercial and household refrigeration and radio. Also radio and refrigeration service and amplifiers. $5,000 cash required, balance payable from earnings. Other pressing interests of owner necessitate sale. Box 1119, Air Conditioning & Refrigeration News.

GET IN on the ground floor! Cleaning hundreds of air filters daily for air conditioning plants, at 50¢ each, formerly thrown away. Now open your own business similar to that of a laundry, giving filter cleaning service in your city. Write for full particulars now! WHALEN MFG. Co., 210 North 18th Street, Omaha, Nebr.

EQUIPMENT FOR SALE

AVAILABLE FOR immediate sale twenty (20) Model "N" Frigidaire units at $20.00 each, and ten (10) Model "C" Frigidaire units at $35.00 each. Prices F.O.B. Philadelphia, subject to prior sale. We advise immediate action on this rare bargain. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Avenue, Philadelphia, Pa.

HAVE FOR immediate cash sale approximately 200 electric refrigerators, Frigidaires, Kelvinators, and Merchant and Evans, complete, $10.00 each, as is. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Ave., Philadelphia, Pa.

REPAIR SERVICE

GENERAL ELECTRIC and Westinghouse hermetic unit replacement and rebuilding service. One year unconditional guarantee. All units are completely rebuilt on a modern production line, tested through every step of rebuilding with complete test equipment, subjected to exhaustive operation tests for wattage, efficiency, quietness and then Duco finished. General Electric DR1, DR2, and Westinghouse, $30.00. Quotations furnished on other models. Quick service—guaranteed work. REFRIGERATION MAINTENANCE CORPORATION, 321-27 East Grand Avenue, Chicago.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Sandy Celebrates Opening of San Francisco Fair

You could have bet a sure thing by wagering that few San Franciscans would outdo Clarence F. "Sandy" Pratt of the California Refrigerator Co. in the matter of decorations for the opening of the Golden Gate Exposition. Theme for the opening was the "days of '49" and Sandy transformed his store into "Kold Gulch, Calef." and put his entire organization into costume. From left to right they are Mark Bale, Marian Dundon, Jack Merriman, Pearl Gaylord, David Meikle, Cliff Swezy, purchasing agent; Pauline Will, Winfield Walker, Carol Green, Robert Vandevort, Sandy himself (as Jack Hamlin, Mark Twain's famed gentleman gambler); Mrs. Pratt, secretary of the company; Lem V. Branson, sales manager; and Jess E. Rauch, refrigeration engineer.

Sandy Pratt Rides Again—on Trail of Varmint That Stole His Hoss Thief

By Robert Price

SAN FRANCISCO—"Hiyo Sandy!" With that clarion cry echoing across the Pacific hills, Clarence F. (Sandy) Pratt and his California Refrigerator Co. gang ride again. This time they're not after sales records—although they hope to bag a few on the way—but they are out to corral the varmint that snitched the body of the "hoss thief" that swung in *front* of the weather-beaten rough board and picket front of the store.

"We thought that there warn't nuthin as low down as a hoss thief," drawled Sandy with a glint in his eye and fingers itchin' to fan his shootin' iron, "but this critter who'd steal a hoss thief is shore lower down yet."

Sandy, forgetting for the moment his outdoor Christmas tree campaign, has assumed the role of Jack Hamlin, Mark Twain's famous gentleman gambler character, and has outfitted his co-workers as a straight-a-shootin' parcel of buckaroos as ever dogged a steer—or hogtied a compressor.

TRADIN' POST

It was all a part of the celebration for the opening of the Golden Gate Exposition here, and Sandy and his hard ridin' sons and daughters of the old West fixed up the refrigeration parts and supplies store to represent a frontier trading post and climbed into duds that had all the authenticity and color of '49 days.

Just as they settled back into the forty-niner era and prepared to ride herd for the Golden State—and, of course, refrigeration—along came this sneakin' coyote and made off with the prop hoss thief. Although the store is right across the street from the United States Marshal's office, the ornery critter took the body from under the nose of the law and didn't leave a hint of a trail.

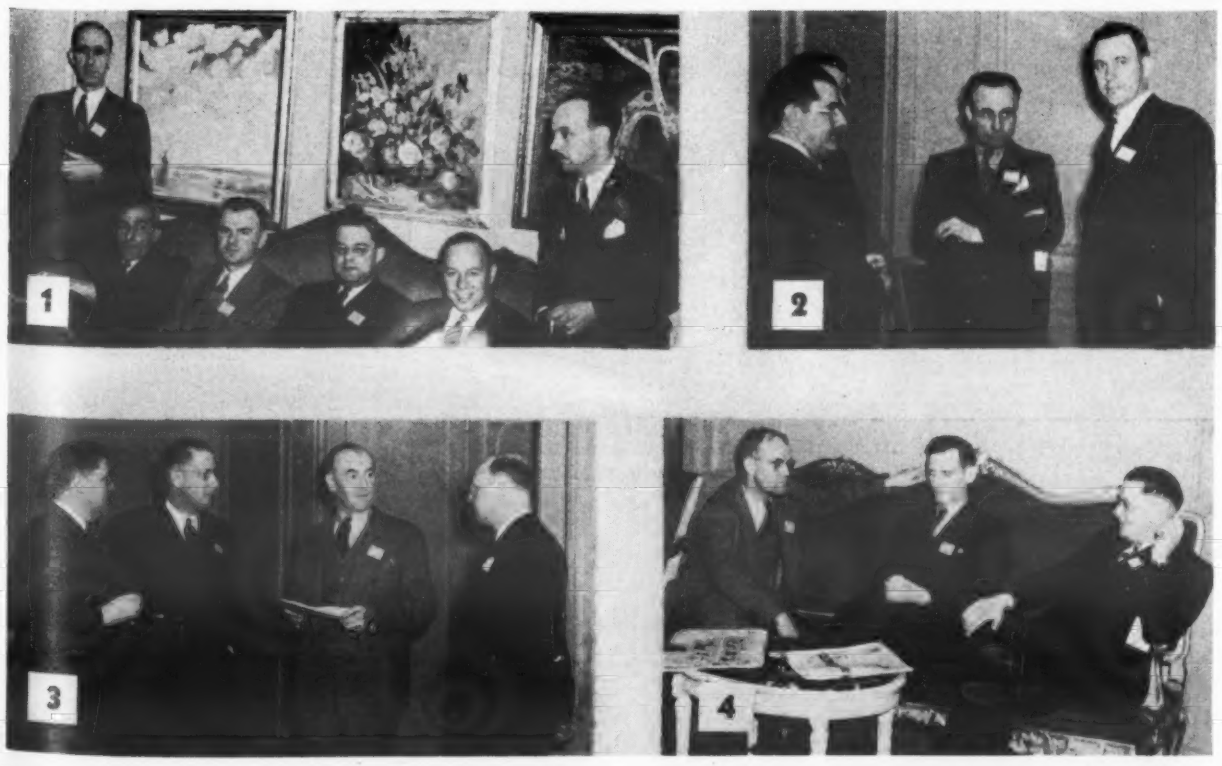
When the "Feds" were stymied, Sandy and the boys organized a posse to bring back their man and the body, maybe two bodies. Police, according to Trader Pratt, attributed the theft to the hoss thief's parents who, they said, removed the body for "more decent interment."

STILL IN THE BUSINESS

Settlers are bettin' that Sandy and the boys will track the critter down and throw the coil and compressor brand into him. (Last bulletins were, however, that the police had their man.)

In the meantime, the reports were that the store itself created a great deal of interest out in these parts. Signs such as "Fodder Frozen Free," "Frost Valves," and "All Kinds of Provisions Frozen Here" revealed the interests closest to the hearts beating under those cowhide vests.

'Lobby Conferences' Are Where a Lot of Business Is Done at Conventions



When members of the National Refrigeration Supply Jobbers Association met recently in Chicago the formal sessions of the annual convention were well attended, but there was a lot of "business" transacted also in informal "sessions" in hallways and lobbies before and between sessions.

(1) This group supplies the greater part of the New England trade. (Left to right) C. P. Payson, C. P. Payson, 576 Main St., Springfield, Mass.; Frank E. Morley, Resco, Inc., New Haven, Conn.; Art Wasserman, Marsden & Wasserman, Hartford, Conn.; Bob Sheperdson, Standard Supply, Inc., Worcester, Mass.; Chet Borden, A. E. Borden Co., Boston; Joe Simons, Marsden & Wasserman.

(2) Reading from left to right are three jobbers from the southwest: A. R. Morin, Macklanburg Brass & Copper Products, Oklahoma City, Okla.; Clyde R. Westbrook, Westbrook Carburetor Electrical Co., San Antonio, Tex.; and J. R. Sparkman, Electromotive Corp., Dallas, Tex.

(3) Leo H. Gorton, Machine Tool & Supply Co., Tulsa (newly elected president of the Jobbers Association); H. W. Blythe, the H. W. Blythe Co., Chicago (secretary-treasurer); and Henry W. Merkel, The Merkel Bros. Co., Cincinnati (retiring president), confer with Claude L. Bowling of the Geo. Dehler, Jr. & Co., Louisville, Ky.

(4) Officials of the Mississippi Valley regional association form plans for their own meeting. Left to right are L. M. Tesdell of Iowa Radio Corp., Des Moines, Iowa; E. L. Bengston, Republic Electric Co., Davenport, Iowa; and O. C. Mayes, National Refrigeration Service, Inc., Sioux City, Iowa.

Price Maintenance, Utility Merchandising & Locker Plants Subject of Proposed State Laws

(Concluded from Page 1, Column 3)

ing off seasons. Self-help cooperatives, factories, and diversified industries can be established in those areas where we have seasonal occupations."

Among other bills introduced are measures to levy a 1% tax on conditional sales contracts, to tax chain stores on a graduated scale with a tax of $250 per store on firms operating 20 or more units, and to advance the final date for payment of the first instalment of state taxes to Nov. 15 from Dec. 5. The chain store tax measure is similar to one adopted by the 1935 legislature but subsequently defeated at a referendum.

COLORADO—A bill introduced in the Colorado legislature would regulate the use and operation of air compressors, heating plants, steam boilers, and steam engines.

Among measures expected are bills to repeal the fair trade act, the unfair sales act, chain store license act, and to increase the present 2% sales tax.

ACTION IN CONNECTICUT

CONNECTICUT—Early bills would repeal the fair trades act of 1937 and would levy a $50 chain store tax.

The Connecticut Federation of Labor has submitted a 15-point legislative program that includes examination of persons handling meat to assure the public that they comply with health standards and which would concern locker plant operators, licensing of air conditioning and other contractors so they shall qualify as contractors and be responsible for all bills for purchase of materials and payment of wages.

DELAWARE—The Master Plumbers Association of Delaware is planning introduction of a state plumbing code which will undoubtedly have a bearing upon air-conditioning contractors.

GEORGIA—Bills in the legislature would abolish the contractors' licensing board, and would limit the license tax on chain stores so that when only one store is owned in the state by an organization it cannot be taxed as a chain store.

IDAHO—Among bills introduced are measures to make it a nuisance to peddle goods from house to house, and to require all trucks and trailers to be conspicuously lettered with the name and address of the owner.

UTILITY BILL IN INDIANA

INDIANA—Of principal interest to appliance merchandisers and dealers in air-conditioning equipment is a measure to prevent utilities from engaging directly or indirectly in any subsidiary business other than their main or primary business. It would prohibit merchandising and jobbing activities now engaged in by Indiana utility companies.

Other measures would tax chain stores from $10 to $500 a unit, depending upon the number of stores operated.

IOWA—The Iowa State Bar Association is seeking repeal of the state use tax, which extends the sales tax to merchandise purchased outside the state from mail order houses and other sources.

A bill is being prepared to prohibit utility companies from appliance merchandising.

KANSAS—Among bills submitted by the legislative council were two that would license and tax chain stores and would prohibit price discrimination.

MICHIGAN — An assembly bill would credit trade-in values for sales tax purposes, enabling the tax to be computed only on the difference between the trade-in allowance and the purchase price.

MONTANA—In an effort to halt operation of correspondence schools in exploitation of persons interested in the refrigeration, air conditioning, and other industries, a senate bill to make it a misdemeanor for such organizations to operate without the supervision and approval of the state board of education has been given approval by that body's committee on education.

NEBRASKA TRADE ACT

NEBRASKA—A new unfair trades act to replace one found unconstitutional by the state supreme court last October has been introduced.

NEW MEXICO—A house bill would license and bond operators of cold storage plants as well as butchers, slaughter houses, and other dealers in fresh meats.

GOV. ASKS FOR PLANTS

NORTH CAROLINA—Gov. Clyde R. Hoey, in his recent address to the general assembly, asked for establishment of three or four refrigerating plants in different parts of the state as an aid to agriculture. They were described as a need of rural North Carolina, the governor adding that "any city taking the initiative in this undertaking would build a very sure foundation for its own enduring prosperity."

Carrying out his recommendation, the state board of agriculture has submitted a legislative program to aid in providing an adequate market for the farmer, including establishment of shipping centers with refrigeration facilities for perishable products. A chain store tax bill is also before the legislature.

'LABELING' IN OHIO

OHIO—Cold storage plants would be affected by a measure requiring that all cold storage foods be so labeled on the container delivered to the consumer.

OKLAHOMA—Despite his vote against such a measure when a member of the legislature, Gov. Phillips is said to look kindly toward a chain store tax proposal backed by Oklahoma Independents, Inc., an organization of retailers.

Another house bill would tax every firm offering rebates in merchandise on total sales through premiums, stamps, or certificates, on the basis of population. In the larger cities, the annual tax on each firm would be $4,000.

OREGON—Bills to regulate cold storage plants and to tax chain stores are before the legislature.

TENNESSEE—A house measure carrying the endorsement of 12 representatives would curtail activities of collection agencies, limiting them to addressing polite letters to debtors requesting payment of the account.

TEXAS FAIR TRADE

TEXAS—A bill would add Texas to the 43 states with fair trade legislation, permitting price fixing of trademarked products, and would impose a graduated scale of occupation taxes on itinerant vendors.

UTAH—The state fair trade commission, reporting after a year of operation that its activities have brought elimination of unfair and "vicious" trade practices, is seeking amendments to clarify the fair trade act and the unfair practices act.

VERMONT LOCKER PLANTS

VERMONT—A special committee named to study the state dairy industry has recommended to Gov. George D. Aiken establishment of locker storage refrigeration plants.

WYOMING—A senate bill would allow credit for trade-ins when computing the sales tax on appliances and other items, with a second measure setting the same standard for the state use tax.

A house bill would license, for the purpose of establishing sanitary standards, cold storage locker plants and all places where food is prepared.

A chain store tax bill introduced late in January is before the house.

Westinghouse Jan. Sales Highest In History

MANSFIELD, Ohio—Electric refrigerator shipments by Westinghouse last month were higher than in any other January in the company's history, and exceeded shipments during the entire first quarter of 1938, reports R. C. Cosgrove, manager of the household refrigeration department.

January's record has been exceeded by only six months since Westinghouse has been in the refrigeration business, Mr. Cosgrove said.

"This is a most impressive indication that our business is in a much healthier condition, as normally April and May are the months showing the greatest activity," he declared. "Last month's record has been topped only by April and May shipments in 1936 and 1937, both years of unprecedented activity in the industry.

"We feel that January was not an abnormal month, but rather an indication of a return to the normal activity of the refrigerator business."

Combine Preview, Dance

NEW YORK CITY — Electrical Appliance Merchants Association of Queens will combine a preview showing of 1939 appliance lines with a dinner dance on Feb. 23 at Queens Terrace, Woodside, L. I., according to an announcement by Jay S. Woodruff, who has been named full-time executive secretary of the association.